



HAZARD RANKING SYSTEM DOCUMENTATION RECORD

Evergreen Manor Groundwater Contamination

ILD 984 836 734

**Prepared by Illinois Environmental Protection Agency
May 28, 1997**

HRS DOCUMENTATION RECORD--REVIEW COVER SHEET

Name of Site: Evergreen Manor Ground Water Contamination
Plume
ILD984836734

Contact Persons

Site Investigation: Judy Triller & Greg Dunn	217-782-6761
(Name)	(Telephone)

Documentation Record: Judy Triller	217-782-6761
(Name)	(Telephone)

Pathways, Components, or Threats Not Evaluated

The surface water migration, air migration and soil exposure pathways were not evaluated during the preparation of this Hazard Ranking System package. These pathways were not evaluated due to insufficient information.

HRS DOCUMENTATION RECORD

Name of Site: Evergreen Manor Ground Water Contamination
Plume
ILD 984836734

U.S. EPA Region: 5

Date Prepared: January 12, 1998

Street Address of Site: Sections 16, 20, 21, 29, and 32 in
Township 46 North, Range 2 East

County and State: Winnebago County, Illinois

General Location in the State: North-central Illinois

Topographic Map: South Beloit, ILL.-WIS.

Latitude: 42° 26' 32.0"

Longitude: 89° 01' 36.0"

Scores

Air Pathway	Not Evaluated
Ground Water Pathway	100
Soil Exposure Pathway	Not Evaluated
Surface Water Pathway	Not Evaluated
HRS SITE SCORE	50

WORKSHEET FOR COMPUTING HRS SITE SCORE

	<u>S</u>	<u>S²</u>
1. Ground Water Migration Pathway Score (S_{gw}) (from Table 3-1, line 13)	<u>100</u>	10000
2a. Surface Water Overland/Flood Migration Component (from Table 4-1, line 30)	<u>0</u>	
2b. Ground Water to Surface Water Migration Component (from Table 4-25, line 28)	<u>0</u>	
2c. Surface Water Migration Pathway Score (S_{sw}) Enter the larger of lines 2a and 2b as the pathway score.	<u>0</u>	<u>0</u>
3. Soil Exposure Pathway Score (S_s) (from Table 5-1, line 22)	<u>0</u>	<u>0</u>
4. Air Migration Pathway Score (S_a) (from Table 6-1, line 12)	<u>0</u>	<u>0</u>
5. Total of $S_{gw}^2 + S_{sw}^2 + S_s^2 + S_a^2$		10000
6. HRS Site Score Divide the value on line 5 by 4 and take the square root	<u>50</u>	

REFERENCES

Reference

Number Description of the Reference

1. Hazard Ranking System, December 14, 1990, Final Rule 40 CFR 300, Volume 55, No. 241, pp. 51532-51667.
2. U.S. EPA, June, 1996, Superfund Chemical Data Matrix (SCDM). 107 pages included.
3. Illinois EPA, 1997, Evergreen Manor Ground water Contamination 4-Mile Radius Map. 1 page.
4. United States Geological Survey, 1993, South Beloit, Ill.-Wis. Quadrangle, 7.5 Minute Series. 1 page.
5. United States Geological Survey, 1993, Belvidere NW, Ill.-Wis. Quadrangle, 7.5 Minute Series. 1 page.
6. United States Geological Survey, 1962, photorevised 1971 and 1976, Beloit, Wis. Quadrangle, 7.5 Minute Series. 1 page.
7. United States Geological Survey, 1961, photorevised 1971 and 1976, Shopiere, Wis. Quadrangle, 7.5 Minute Series. 1 page.
8. Triller, Judy, Environmental Protection Specialist, Illinois EPA, May 14, 1997 telephone conversation log with Roger Rudin, Regional Engineer, Illinois Department of Public Health, 2 pages.
9. Code of Federal Regulations, USEPA Guidelines Establishing Test Procedures for the Analysis of Pollutants, 40 CFR 136, Appendix B (1997).
10. Knapp, Vernon, Professional Scientist/Hydrologist, Illinois State Water Survey, May 14, 1997 telefax. 2 pages.
11. Dunn Greg, Illinois EPA, May 15, 1997 memorandum to IEPA Bureau of Land Pollution File. 2 pages.
12. Prescott, Ted, Environmental Protection Specialist, May 13, 1997 Method For Estimating Area Of Ground Water Plume. 1 page.
13. Turpin, Ron, Contract Laboratories Administrator, Illinois EPA, Division of Laboratories, December 28, 1993. Data Validation Package. 167 pages.
14. Turpin, Ron, Contract Laboratories Administrator, Illinois EPA, Division of Laboratories, December 21, 1993 . Data Validation Package. 560 pages.
15. Triller, Judy, Illinois EPA, November 9, 1993 - November 16, 1993 Field Log Book. 58 pages.

16. Dunn, Greg, Illinois EPA, December 9, 1993 - February 23, 1995. Field Log Book, 150 pages.
17. Illinois Department of Energy and Natural Resources, State Geological Survey, 1967. Sand And Gravel Resources Along The Rock River In Illinois. 5 pages of 17 pages are included.
18. Illinois Department of Energy and Natural Resources, State Geological Survey, 1960, Reprinted 1972. Ground-Water Geology Of Winnebago County, Illinois. 42 pages of 64 pages are included.
19. Triller, Judy, Illinois EPA, May 15, 1997 Memorandum to Bureau of Land Pollution File. 3 Pages.
20. Illinois Department of Energy and Natural Resources, State Geological Survey Division, 1984. Geology For Planning In Boone And Winnebago Counties. 36 pages of 69 pages are included.
21. Illinois Department of Energy and Natural Resources, State Water Survey Division, multiple dates. Illinois Department of Public Health Well construction Reports/Geological and Water Surveys Well Records. 53 pages.
22. Olson Well Company, multiple dates. Well records. 3 pages.
23. Reidel Environmental Services, Inc., April 4, 1994. Letter and Report to Gregory W. Dunn of Illinois EPA. 73 pages.
24. Dunn, Greg, Illinois EPA, June 22, 1996. Memorandum to Bureau of Land File. 14 pages.
25. Dunn, Greg, Illinois EPA, December 19-21, 1994. Site Inspection Document. 57 pages.
26. Wells, Dan, Rockford FOS, Illinois EPA, January 10, 1994. Memorandum to Division File. 12 pages.
27. Illinois Department of Energy and Natural Resources, State Water Survey Division, October 21, 1993. Private Well Database. 14 pages.
28. Bridges, Chris, Division of Laboratories, Quality Assurance Section, Illinois EPA, December 8, 1994. Memorandum to Tom Crause, Bureau of Land, Illinois EPA. 23 pages.
29. Willman, Jerry, Project Manager, Illinois EPA, May 28, 1997 Draft memorandum to Ali Hyderi and Judy Triller. 7 pages.
30. U.S. Department of Commerce, Bureau of the Census, 1990 Census of Population, General Population Characteristics, Illinois. June 1992. 3 pages included.
31. Illinois Department of Registration and Education, State Geological Survey, 1975. Handbook of Illinois Stratigraphy. 22 pages of 261 pages are included.
32. Bridges, Chris, Division of Laboratories, Quality Assurance Section, Illinois EPA, March 9, 1998. Memorandum to Peter Sorensen, Bureau of Land, Illinois EPA. 9 pages.
33. Bridges, Chris, Division of Laboratories, Quality Assurance Section, Illinois EPA, March 9, 1998. Memorandum to Peter Sorensen, Bureau of Land, Illinois EPA. 2 pages.

Figure 1 Site Location Within the State

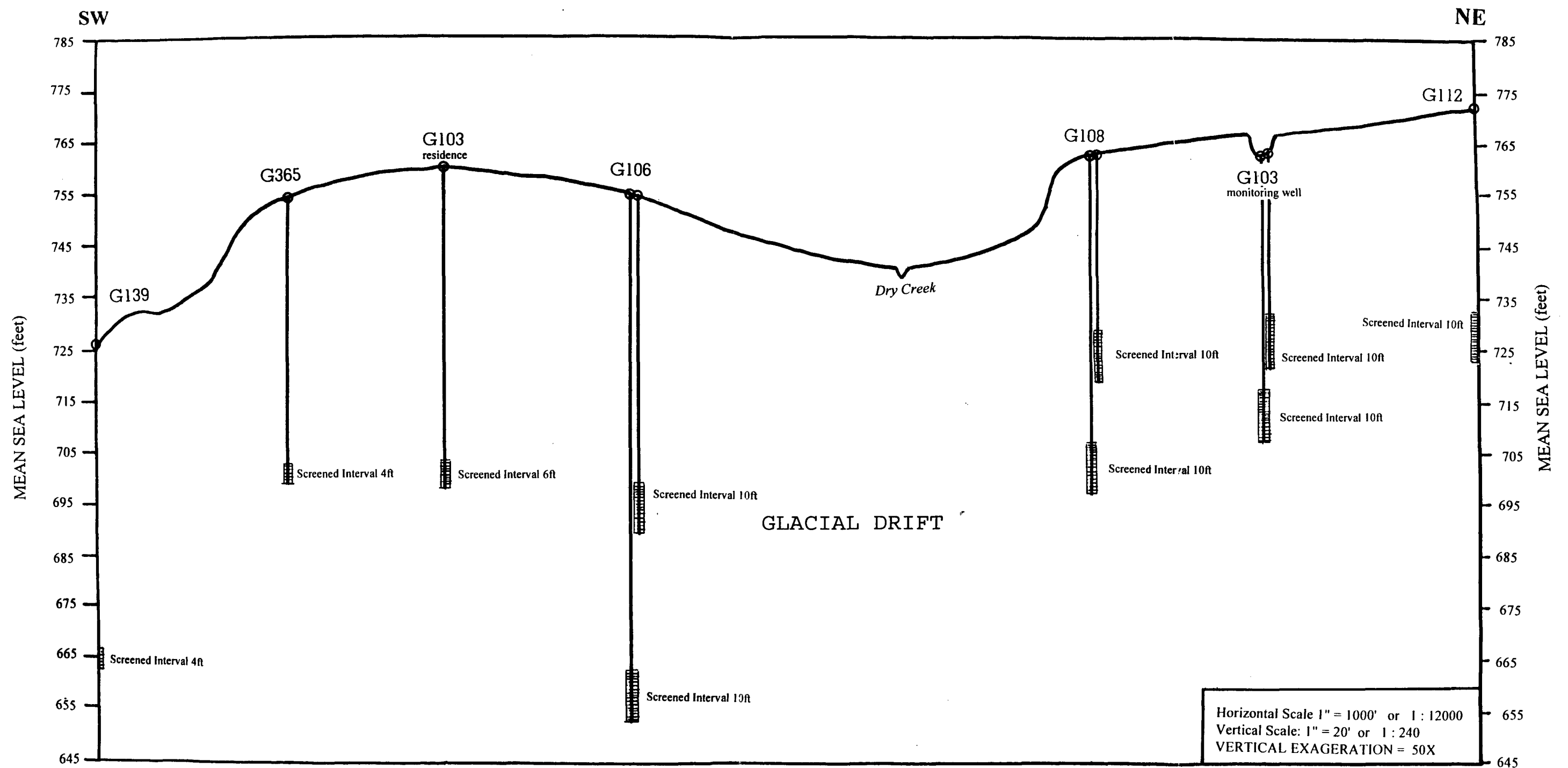


FIGURE 9
GEOLOGICAL CROSS SECTION OF GROUNDWATER PLUME

Illinois Environmental Protection Agency | Site: Evergreen Manor Groundwater Contamination | ILD 984836734

SD-Characterization and Containment

SOURCE DESCRIPTION

2.0

The source of this site is the Evergreen Manor Ground Water Contamination Plume. The Evergreen Manor Ground Water Contamination Plume is located in north-central Illinois in Winnebago County (3). Refer to Figure 1 for general site location. The plume extends approximately 2.25 miles beginning near an industrial/commercial area, extending to the southwest toward the Rock River (3). See Figures 2 and 3.

The contamination was initially discovered in November of 1990, when a lending institution required a local homeowner to have the home's private water supply analyzed (8). Extensive sampling of private wells has shown the ground water in much of the residential area to be affected by the plume, as discussed in Section 3.1. When the analysis of the well water revealed the presence of organic compounds, the Illinois Department of Public Health began sampling other residential wells in the area (8).

It is likely that the contaminants enter the river, and possibly flow below the river, which in the area of the site has a bottom elevation of approximately 705 feet above mean sea level (MSL) (10:2).

Although ground water investigations have tracked the plume to a small industrial/commercial area, the specific source(s) of contamination is still unknown (11).

2.2 Source Characterization

Number of the source: 1

Name and description of the source: Evergreen Manor Ground Water Contamination Plume

Source Type: "Other"

Source 1 consists of a ground water contaminant plume. The area of the plume itself, as defined by sample points utilized in this document to establish an observed release, is approximately 220 acres(12) and extends approximately 2.25 miles long and 0.2 mile wide (3).

The contaminants of concern are chloromethane, methylene chloride, 1,1-dichloroethene, 1,1-dichloroethane, 1,1,1-trichloroethane, trichloroethene, 1,2-dichloroethene, and tetrachloroethene(13:15-112; 14:all).

Figure 2 Estimated Extent of Ground Water Plume

Figure 3
Aerial Photo of site Vicinity

4-16-88

4289-27-IL591



IDOT AERIAL PHOTOGRAPHY 4-16-22
SCALE 1:44250



FIGURE 3 AERIAL PHOTOGRAPH OF SITE VICINITY

Illinois Environmental Protection Agency

SITE: Evergreen Manor Groundwater Contamination ILD 984836734

SD-Characterization and Containment

Location of the source, with reference to a map of the site:

The contaminant plume is oriented northeast to southwest and extends from an industrial/commercial area located just east of the intersection of State Highway 251 and Rockton Road (approximately 1.5 miles northwest of the village of Roscoe in Winnebago County, Illinois) to the north bank of the Rock River. Refer to Figures 2 and 3.

Containment

Gas release to air

Not Evaluated

Particulate release to air

Not Evaluated

Release to ground water

The source being a ground water plume, no type of containment is in place to restrict migration of the ground water contaminant plume. According to the Hazard Ranking System; Final Rule, Table 3-2, the containment factor value for a source with no liner is 10 (1:51596).

Release via overland migration and/or flood

Not Evaluated

2.4.1 Hazardous Substances

Hazardous Substance Evidence

Chloromethane Four residential wells meet the observed release criteria for chloromethane. Samples collected by IEPA in December 1993.

References: 2:51; 14:35-38, 45-46, 66-67

Methylene Chloride Six residential wells meet the observed release criteria for methylene chloride. Samples collected by IEPA between January and March 1994.

References: 2:60; 14:309-314, 331-333, 337-342, 446-448

1,1-Dichloroethylene Thirty-one residential wells and six monitoring wells meet the (1,1-DCE) observed release criteria for 1,1-DCE. Samples collected by IEPA between December 1993 and February 1995.

References: 2:53; 14:106-108, 129-134, 138-149, 169-174, 239-259, 284-286, 306-314, 331-342, 362-364, 384-395, 424-426, 446-448, 468-482

1,1-Dichloroethane Twenty-eight residential wells and two monitoring wells meet the (1,1-DCA) observed release criteria for 1,1-DCA. Samples collected by IEPA between December 1993 and February 1995.

References: 2:53; 14:35-36, 129-134, 144-149, 169-174, 239-256, 306-314, 331-342, 362-364, 384-398, 421-426, 446-448, 468-482, 531-533

1,1,1-Trichloroethane Eighty residential wells and ten (1,1,1-TCA) monitoring wells meet the observed release criteria for 1,1,1-TCA. Samples collected by IEPA between November 1993 and February 1995.

References: 2:65; 13:2-57, 62-77, 80-91, 94-105, 114-115, 118-121, 124-133, 138-145, 148-155; 14:31-46, 66-67, 86-87, 106-108, 129-149, 169-180, 184-186, 206-208, 233-250, 284-286, 306-314, 331-342, 362-364, 384-398, 421-426, 446-448, 468-482, 522-548, 558-560.

Trichloroethylene (TCE) Eighty-three residential wells and seven monitoring well samples meet the observed release criteria for TCE. Samples collected by IEPA from November 1993 to February 1995.

References: 2:65; 13:62-77, 80-107, 114-121, 124-135, 138-145, 148-155; 14:31-46, 66-67, 86-87, 129-149, 169-174, 184-186, 206-208, 239-250, 257-259, 284-286, 306-314, 331-342, 362-364, 384-398, 421-426, 446-448, 468-482, 516-518, 528-536, 543-548

cis-1,2-Dichloroethylene (cis-1,2-DCE) Twenty-eight residential wells and three monitoring well samples meet the observed release criteria for cis-1,2-DCE. Samples collected by IEPA from January 1994 to February 1995.

References: 2:54; 14:129-134, 144-149, 184-186, 206-208, 239-256, 284-286, 306-314, 331-342, 384-398, 421-426, 446-448, 468-482, 531-533, 543-545

Tetrachloroethylene (PCE) Nine residential wells and seven monitoring well samples meet the observed release criteria for PCE. Samples collected by IEPA from December 1993 to February 1995.

References: 2:64; 14:31-44, 424-426

1,2-Dichloroethylene (total) Ten residential wells meet the observed release criteria for 1,2-DCE total. Samples collected by IEPA in December 1993.
(1,2-DCE total)

References: 14:31-46, 66-67, 86-87

Refer to Section 3.1.1, Observed Release, for more specific concentration data of the hazardous substances in the source.

2.4.2. Hazardous Waste Quantity

No estimate is made of hazardous waste quantity. However, it is considered to be greater than 0 because a release of nine contaminants to the ground water has been documented.

2.4.2.1.1. Hazardous Constituent Quantity

<u>Hazardous Substance</u>	<u>Constituent Quantity (pounds) (Mass - S)</u>	<u>Reference</u>
Hazardous Constituent Quantity unknown for this source		1:51591

sum: (pounds)

Hazardous Constituent Quantity Value (S): unknown but >0

SD-Hazardous Wastestream Quantity
Source No.: 1

2.4.2.1.2. Hazardous Wastestream Quantity

<u>Hazardous Wastestream</u>	<u>Quantity (pounds)</u>	<u>Reference</u>
Hazardous Wastestream Quantity unknown for this source		1:51591

sum: (pounds)

Hazardous Wastestream Quantity Value (W): unknown but > 0

2.4.2.1.3. Volume

According to the HRS; Final Rule, for the migration pathways, a value for volume is assigned using the appropriate Tier C equation of Table 2-5 of the HRS; Final Rule (1:51591). However, the Tier C equation for source type 'other' is based on cubic yards of source (1:51591). Because this information is not available for the source, the volume assigned value can not be adequately determined, but is assigned a value of >0.

Volume of this source is unknown.

Dimensions of source (yd3 or gallons):
Reference(s):
Volume Assigned Value: unknown but >0

SD-Source Hazardous Waste Quantity Value
Source No.: 1

2.4.2.1.5. Source Hazardous Waste Quantity Value

According to the HRS; Final Rule the source hazardous waste quantity value is the highest of the values assigned to the source for the hazardous constituent quantity, hazardous wastestream quantity, volume and area measures (1:51591).

Source Hazardous Waste Quantity Value:Unknown, but >0

SITE SUMMARY OF SOURCE DESCRIPTIONS

Source No.	Source Hazardous Waste Quantity Value	Containment			
		Ground Water	Surface Water	Gas	Air Particulate
1	>0	10	N.E.	N.E.	N.E.

According to the HRS; Final Rule the source hazardous waste quantity is taken from the hazardous constituent quantity, hazardous wastestream quantity, volume and area (1:51590). Based on these values for the ground water contaminant plume, a source hazardous waste quantity value of >0 is assigned.

Since no liner is present, a containment value of 10 is assigned in accordance with Table 3-2 of the HRS; Final Rule(1:51596) .

GW-General

3.0 GROUND WATER MIGRATION PATHWAY

3.0.1 GENERAL CONSIDERATIONS

The geology in the area of the site is the result of years of sedimentary bedrock erosion followed by glacial outwash deposition(17:2-3). Prior to the Ice Age (Pleistocene Epoch) the Rock River area was subjected to a long period of stream erosion, cutting through the sedimentary Galena Group and Platteville Group limestones and dolomites, the underlying Glenwood Formation, and into the St. Peter Sandstone Formation (17:2-3;18:15-20). One of the primary geologic features in this area was the ancient Rock Bedrock Valley (18:17). During the Pleistocene Epoch, with the advance and retreat of numerous glaciers, the Rock Bedrock Valley was filled with glacial outwash deposits of silt, sand, and gravel(18:29,30).

Within 4 miles of the site, the geology at any particular location may vary depending upon its location relative to the Rock Bedrock Valley.

According to data collected by the IEPA, ground water elevations decrease from the northeast to the southwest, indicating that shallow groundwater in the area flows from the northeast to the southwest toward the Rock River (25:2-14).

Aquifer 1 (shallow)

Aquifer: Glacial Drift

Description:

Glacial Drift: The glacial drift deposits are relatively coarse-textured, unconsolidated sands and gravels (18:29). These outwash deposits are generally greater than 200 feet(ft.) thick in the major valley areas(18:6), and according to well logs, the drift deposits in the Roscoe area are 250 ft. deep (21:81-84).

Large supplies of ground water are found in the Rock Bedrock Valley (18:30). Permeable outwash deposits often extend to the ground surface, resulting in rapid recharge from the surface streams and precipitation where water levels have dropped due to pumpage (18:30). The primary glacial aquifer for industrial and municipal water supplies in the area consists of extensive deposits of coarse-textured valley-train outwash that is found in the bottom of the valley fill (18:30). The upper part of the fill is less uniform (18:30). The highest capacity wells are developed in the lower part of the valley fill and range from 150 to 300 ft. deep (18:30). The hydraulic conductivity of this stratum is estimated to be 1×10^{-3} centimeters per second (cm/sec.) (20:27).

Aquitard

Description:

Galena Group

Kimmswick Subgroup

Decorah Subgroup

Platteville Group

Plattin Subgroup: The upper most bedrock units in the area are Ordovician age limestone and dolomite of the indicated groups and subgroups (18:12-14) (31:9-20). Because these groups and subgroups can be difficult to distinguish in driller's logs, and they have similar hydrogeological characteristics they are usually considered together (18:14; 20:9-10).

The Galena Group consists of limestone and dolomite formations of the Kimmswick and Decorah Subgroups which total 250-275 feet in thickness in central northern Illinois (31:16).

The Kimmswick Subgroup consists of limestone and dolomite formations, but in northern Illinois formations are dominantly dolomite (31:20). The dolomite is generally medium to coarse-grained, partly cherty, and often porous (18:15). The chert may be found throughout the Subgroups formations, but is generally more abundant in the basal beds (18:15-16). Upper members of the formation are pure, massive, and not cherty (31:20). Also characteristic of the formation members is the presence of persistent thin beds of bentonite along bedding planes (31:20-22). The Kimmswick Subgroup Dolomite is yellowish grey to buff or brown in color (18:15). The thickness of this subgroup in central northern Illinois is about 250 feet (31:20).

The Decorah Subgroup consists of shaly limestone in the upper formations with dolomite formations at the base of the Galena Group (31:16-17). In northern Illinois the Decorah Subgroup consists of two formations, the Spechts Ferry (at the base) which is dominantly green shale and limestone and the overlying Guttenberg which is limestone with beds of brown-red shale (31:16-17). The upper part of the Spechts Ferry Formation is largely green shale, but it also contains beds of greenish grey and dark purplish grey limestone (31:16-17). Near the middle of the formation the most persistent and thickest Ordovician bentonite occurs, commonly 1-3 inches thick, interbedded with green, grey, or brown shale (31:16-17). The lower part of the Spechts Ferry formation consists of fine grained limestone overlying a thin bentonite, generally less than one inch thick, which rests on dark brown shale up to three inches thick (31:17). The upper part of the Guttenberg Formation consists of tan, white weathering, lithographic to very fine grained limestone in brown-red shale, generally two inches thick (31:19-20). The middle portion of the formation is consistently more shaly and thinner bedded with lenses of chert widely present (31:19-20). A bentonite bed up to one inch thick is widely present

beneath the shale and chert beds (31:19-20). The lower part of the Guttenberg Formation consists of grey to grey-tan, white weathering, argillaceous limestone in medium beds with thin grey-brown partings (31:19). The thickness of the Decorah Subgroup in central northern Illinois is approximately 21 feet (18:15; 31:17-20).

The Platteville Group consists of limestone of the Plattin Subgroup and dolomite of the Pecatonica Formation totaling approximately 135 feet in thickness in central northern Illinois (31:9).

The Plattin Subgroup consists of limestone in the upper most formations with shaly limestone and shaly dolomite at the base of the Plattin Subgroup (31:11), dominantly fine-grained and lithographic limestone of its upper most formation and gray shaly limestone and shaly fine-grained dolomite of the base formation (31:11). In central northern Illinois the Plattin Subgroup consists of four formations, the Mifflin, at the base, the overlying Grand Detour and Nachusa comprising the middle with the Quimbys Mill being the upper most formation of the subgroup (31:10-11). The Mifflin Formation is dominantly gray, lithographic limestone, most of it thin bedded and shaly grading to shaly, fine-grained dolomite (31:11). Shale partings in the Mifflin are gray to green (31:11). The Grand Detour Formation consists largely of dolomite-mottled, lithographic, pure limestone, however, in places it is fine to medium-grained dolomite (31:12). Most of this formation is medium bedded, with thin brown-red, dark gray, or black shale partings (31:12). The Nachusa Formation consists largely of fine to medium-grained, vuggy dolomite which is pure to slightly argillaceous, cherty, and thick bedded to massive (31:13). The Quimbys Mill Formation is dense, very fine-grained, slightly argillaceous dolomite that is light brown in color weathering to yellow-buff (31:14). This formation is thin to medium bedded and has thin dark brown shale partings (31:14). The Pecatonica Formation, the basal formation of the Platteville Group, is mainly brown, finely vuggy dolomite in medium to thick beds and has large chert nodules at a few horizons (31:9-10). Toward the base of the Pecatonica, the pure dolomite begins to contain sand grains and in places thin beds of sandstone then grading to and varying from dolomitic sandstone to a siltstone to very sandy, silty dolomite (31:10-11).

The hydraulic conductivity of the combined units of the Galena Group and the Platteville Group is estimated to be 1×10^{-11} cm/sec. to 1×10^{-8} cm/sec. (20:27).

Aquifer 2/ Stratum 1

Aquifer: Sandstone

Description:

Ancell Group

Glenwood Formation: The Ordovician aged Glenwood Formation is wide spread throughout most of Winnebago County except where erosion has cut through into the St. Peter Sandstone and older formations (18:13). The Glenwood Formation, in central northern Illinois is characteristically poorly sorted sandstone, and green shale (31:5). Shales, at the top of the formation, are gray-green, pyritic, finely laminated containing thin laminae of silt and very fine sand (31:6). The basal sandstones are comprised of medium grains of well rounded quartz sand in a matrix of very fine sand and course silt (31:5). The thickness of the Glenwood Formation in this area ranges from 5 to 50 feet (20:9; 31:5). The hydraulic conductivity of this stratum is estimated to be 1×10^{-7} to 1×10^{-4} cm/sec. (20:27).

Aquifer 2/ Stratum 2

Aquifer: Sandstone

Description:

Ancell Group

St. Peter Sandstone Formation: The St. Peter Sandstone is the basal formation of the Ansell Group (31:3). The St. Peter sandstone is an approximate average of 265 ft. thick in Winnebago County (18:13), but thinner in the Rock Bedrock Valley where erosion has cut through upper formations and into the sandstone (18:12-13).

The St. Peter Sandstone consists largely of fine to medium, well sorted, well rounded, frosted grains of quartz sand that is weakly cemented (31:4). The St. Peter Sandstone is exceptionally pure quartz sand essentially free from clay, carbonates, and heavy minerals (31:4). The upper portion of the St. Peter Sandstone is white or buff, becoming red or pink toward the base of the formation (20:9).

The St. Peter Sandstone aquifer is a widely used source of water in Winnebago County (20:9). The hydrogeologic characteristics of the sandstone depend upon its thickness and amount of interstitial fine-grained sediments present (20:9). The hydraulic conductivity of this stratum is estimated to be 1×10^{-4} cm/sec. (20:27).

The Evergreen Manor Ground Water Contamination site is located immediately adjacent to the ancient Rock Valley (4;18:15; 20:4,11-12,17,20). Furthermore, Evergreen Manor is situated over the west downcut wall of the ancient Rock

Valley (4; 18:15; 20:15,20) which, in Winnebago County, runs from north of the City of South Beloit south past the Village of New Milford (4;18:15). Refer also to Figures 4 and 5. The geology below the site consists of two aquifers, one shallow and one deep, being separated by an aquitard (31:3-22). The shallow aquifer is glacial drift with the deep aquifer being the St. Peter Sandstone (20:4,17,19,20; 31:3-22). For Hazard Ranking System purposes, the glacial drift is the only aquifer being evaluated.

Figure 4
Generalized cross sections through boone & winnebago counties

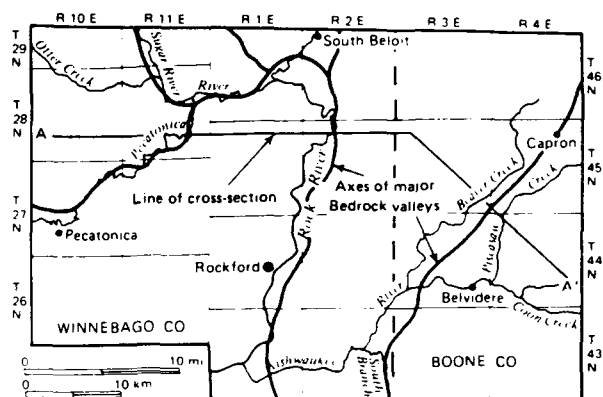
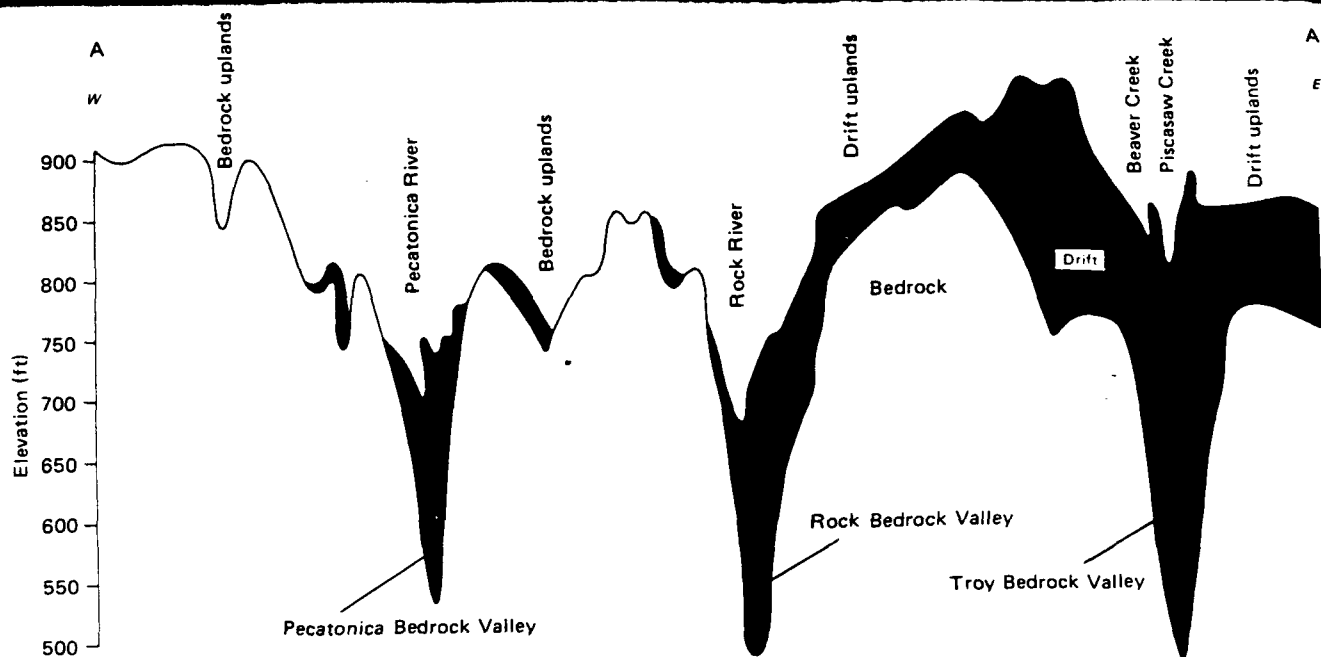


Figure 2. Generalized cross sections through Boone and Winnebago Counties showing relationship between upland topography and bedrock valleys. Vertical exaggeration: 170 x.

GEOLOGY FOR PLANNING IN BOONE AND WINNEBAGO COUNTIES
ISGS 1983

FIGURE 4

GENERALIZED CROSS SECTIONS THROUGH BOONE & WINNEBAGO COUNTIES

Illinois Environmental Protection Agency

Site: Evergreen Manor Groundwater Contamination ILD 984836734

Figure 5
Geological cross section of rock river at roscoe

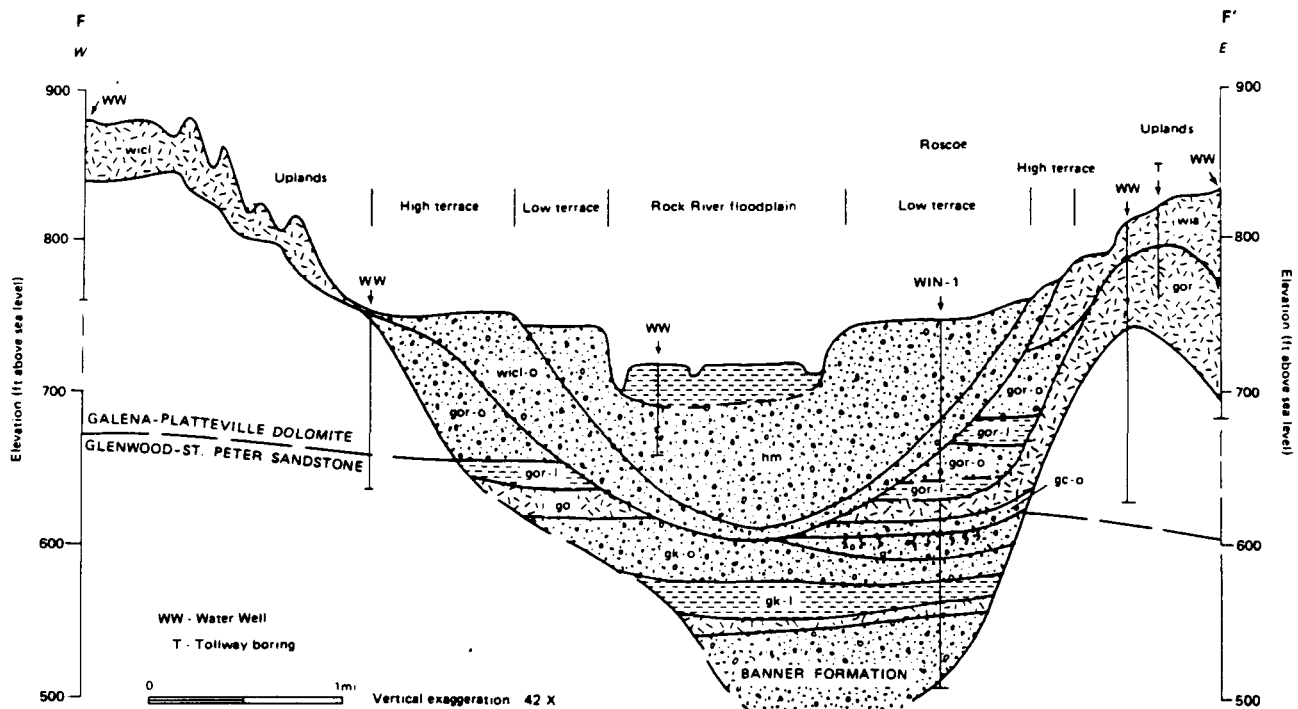


Figure 13f. W-E cross section across Rock River valley at Roscoe.
GEOLOGY FOR PLANNING IN BOONE AND WINNEBAGO COUNTIES

ISGS 1982

FIGURE 5

GEOLOGICAL CROSS SECTION OF ROCK RIVER AT ROSCOE

Illinois Environmental Protection Agency

Site: Evergreen Manor Groundwater Contamination ILD 984836734

3.1 LIKELIHOOD OF RELEASE

In addition to establishing specific background concentrations by chemical analysis below, it should be noted that no source of chlorinated compounds is known to exist upgradient of the plume area. (As discussed in Section 3.0.1, shallow ground water flows from northeast to the southwest.) Referring to Figures 2 and 3, as well as the site 4-mile radius map (3), it can be seen that the area northeast of the known plume is basically rural.

3.1.1 OBSERVED RELEASE

Aquifer Being Evaluated:

An observed release to the shallowest stratum (glacial drift) is documented below. There is no documented observed release to deeper strata.

Because samples were collected during several different sampling events over a period of time, some of the sample identification numbers were duplicated. Samples G101 - G365 were collected from residential wells. Monitoring well locations were identified as G101 - G114, with monitoring well locations G101 - G110 consisting of two wells each, one shallow (designated by an S) and one deeper (designated by a D). Monitoring well locations G111 - G114 consist of only one well at each location, with the samples collected from these wells being designated by the well location and an X.

Chemical Analysis:

- Background Concentration

Sample	Location	Ground Elevation (Feet)	Withdrawal Elev.** (Feet)	Date Sampled	Reference
G101	3809 Valerie Rd.	750*	710-684	11-15-93	4; 15:43; 19:1,2; 21:1
G102	3725 Dorreen Dr.	755*	698-692	11-16-93	4; 15:57; 19:1,2; 21:2
G102D	Southern end of Ecolab property	769.1	714.1-704.1	03-23-94	16:95; 23:39,70
G102D	Southern end of Ecolab property	769.1	714.1-704.1	02-21-95	16:141; 23:39,70
G112X	From monitoring well G112, SE of American Freightways main bldg.	772.34	734.3-723.3	02-21-95	16:139; 24:2,8,9

* Estimated from topographic map (4)

** Ground Elevation minus depth from which water is drawn

Monitoring Well G102D

Sample point G102D (refer to Figure 6 for location) was selected to represent background ground water conditions for the site because according to ground water elevation data collected by the IEPA, this monitoring well is upgradient of the defined plume (25:2-14). Monitoring well G102 is screened from 704.1 ft. to 714.1 ft. MSL(23:39,70). The well is finished and screened in the sand and gravel (23:39,62-66). This well draws water from a comparable elevation and comparable geologic material as the contaminated samples, which are recorded as being drawn from glacial drift composed of sand, gravel, or sand and gravel.

Monitoring Well G112 (Sample G112X)

Sample point G112 (refer to Figure 6 for location) was selected to represent background ground water conditions for the site because according to ground water elevation data collected by the IEPA, this monitoring well is upgradient of the defined plume(25:2-14). Monitoring well G112 is screened from 734.06 ft. MSL to 723.57 ft. MSL (38.28 ft. to 48.77 ft. below ground surface)(24:9). The well is finished and screened in the sand and gravel(24:9). This well draws water from a comparable elevation and comparable geologic material as the contaminated samples, which are recorded as being drawn from the glacial drift composed of sand, gravel, or sand and gravel.

Sample Point G101

Sample point G101 is a residential well (refer to Figure 7 for location) selected to represent background ground water conditions for the site because it is located outside of the contaminant plume. According to ground water elevation data collected by the IEPA, this well is located side-gradient to the plume (25:2-14).

The well log for sample point G101 indicates that the well draws water from the sand and gravel at a depth of 40 ft. to 66 ft. below ground surface (21:1). Referring to a topographic map it is estimated that ground elevation here is approximately 750 ft. MSL, (4), making the approximate elevation of withdrawal 710 ft. - 684 ft. MSL. This well draws water from a comparable elevation and comparable geologic material as the contaminated samples, which are recorded as being drawn from sand, gravel or sand and gravel(21:all; 22:all).

Sample Point G102

Sample Point G102, a residential well, (refer to Figure 7 for location) was selected to represent background ground water conditions for the site as it is located outside of the contaminant plume. According to ground water elevation data collected by the IEPA, this well is located side-gradient to the plume (25:2-14).

The well log for sample point G102 indicates that the well draws water from the gravel at a depth of 57 ft. to 63 ft. below ground surface (21:2). Referring to a topographic map it is estimated that ground surface elevation here is approximately 755 ft. MSL (4) making the approximate elevation of withdrawal 698 ft. - 692 ft. MSL. This well draws water from a comparable elevation and comparable geologic material as the contaminated samples, which are recorded as being drawn from sand, gravel or sand and gravel(21:all; 22:all).



Not to Scale

Rockton Road

G113

• *G112*

• *G114*

Ecolab

• *G111*

• *G103*

• *G102*

Waste Management

G107 •

G108 •

G109 •

G110 •

Route 251

Roscoe Ready Mix

McCurry Road

Kelley Sand & Gravel

Warner Brake & Clutch

G101 •

G104 •

G105 •

• *G106*

Sample Locations Represent a Shallow & Deep Cluster For Wells G101 - G110

Source: IEPA Memorandum To Bureau of Land File, Dated July 22, 1996, From Greg Dunn.

FIGURE 6 MONITORING WELL SAMPLE LOCATIONS

Illinois Environmental Protection Agency

Site: Evergreen Manor Groundwater Contamination
ILD 984836734

Sample	Hazardous Substance	Concentration ug/l	CRQL ug/l	References
G101	PCE TCE 1,1-DCA 1,1-DCE 1,1,1-TCA Chloromethane Methylene Chloride	10 U 10 U 10 U 10 U 10 U 10 U 10 U	10 10 10 10 10 10 10	13:44-59 28:all
G102	PCE TCE 1,1-DCA 1,1-DCE 1,1,1-TCA Chloromethane Methylene Chloride	10 U 10 U 10 U 10 U 10 U 10 U 10 U	10 10 10 10 10 10 10	13:44-57, 60-61 28:all
G102D (1994)	PCE TCE 1,1-DCA 1,1-DCE 1,1,1-TCA c-1,2-DCE Chloromethane Methylene Chloride	0.5 U 0.5 U 0.4 U 0.6 U 0.4 U 0.6 U 0.8U 0.5 U	0.5 0.5 0.4 0.6 0.4 0.6 0.8 0.5	14:418-420
		0.5 U		

Sample	Hazardous Substance	Concentration ug/l	CRQL ug/l	References
G102D (1995)	PCE	1 U	1	14:519-521
	TCE	0.5 U	0.5	
	1,1-DCA	1 U	1	
	1,1-DCE	0.5 U	0.5	
	1,1,1-TCA	0.5 U	0.5	
	c-1,2-DCE	1 U	1	
	Chloromethane	2 U	2	
	Methylene Chloride	1 U	1	
G112X	PCE	1 U	1	14:552-554
	TCE	0.5 U	0.5	
	1,1-DCA	1 U	1	
	1,1-DCE	0.5 U	0.5	
	1,1,1-TCA	0.5 U	0.5	
	c-1,2-DCE	1 U	1	
	Chloromethane	2 U	2	
	Methylene Chloride	1 U	1	

Refer to Figures 8 and 9 for the geological cross-section of the area sampled.

Figure 8

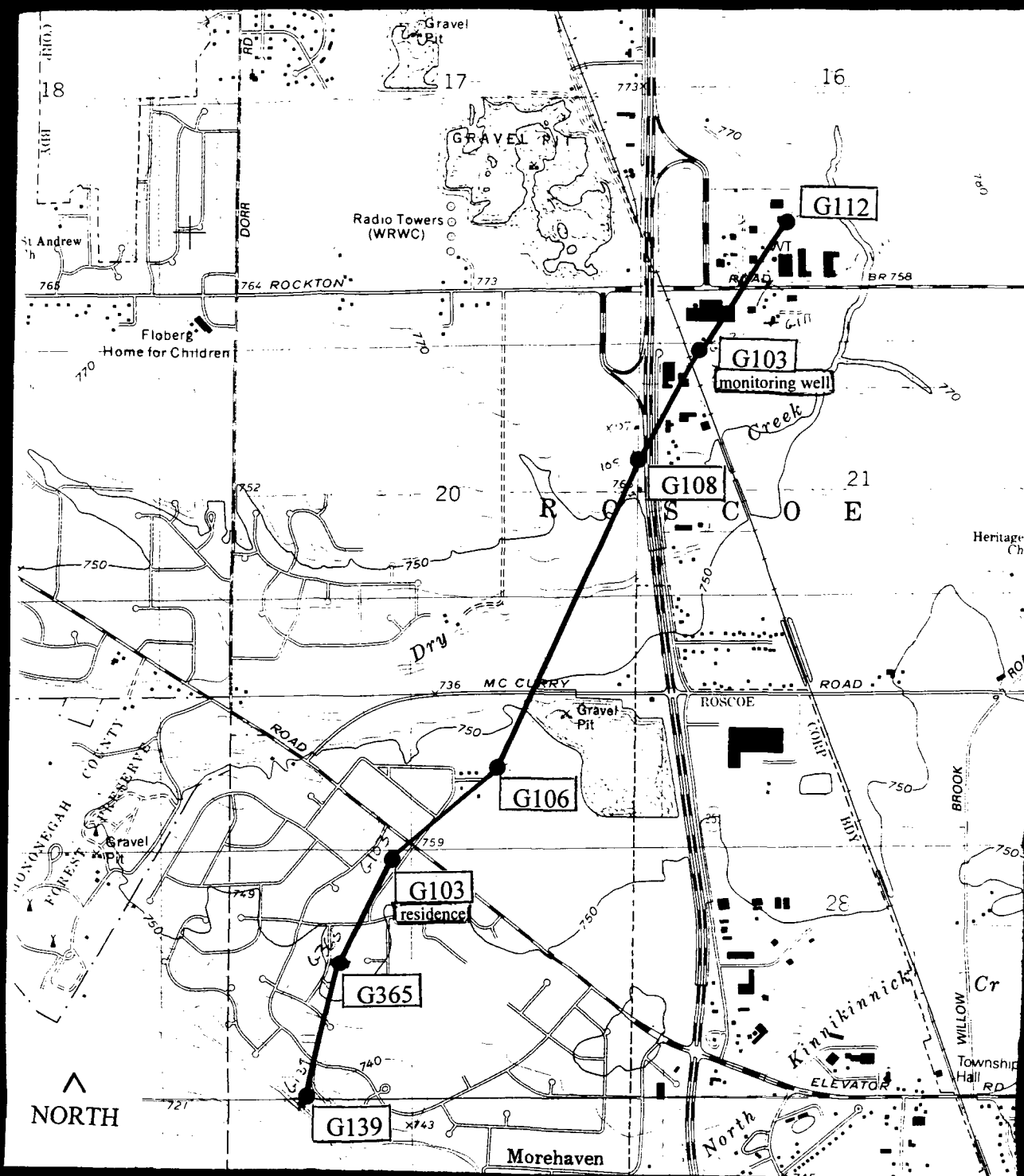


FIGURE 8

LOCATION OF CROSS SECTION

Illinois Environmental Protection Agency

Site: Evergreen Manor Groundwater Contamination ILD 984836734

Source: South Beloit Quadrangle/USGS Topographic Map

Figure 9

- Contaminated Samples

Sample	Location	Surface Elevation feet above Mean Sea Level (MSL)	Elevation of Withdrawal ** feet above Mean Sea Level (MSL)	Date Sampled	Reference
G103	12102 Blue Spruce Dr.	755*	698 - 692	11/9/93	4; 15:5-6; 19:1,2; 21:3
G104	12080 Blue Spruce Dr.	755*	704 - 692	11/9/93	4; 15:7; 19:1,2; 21:4
G105	12062 Blue Spruce Dr.	750*	687	11/9/93	4; 15:8; 19:1,2; 22:1
G106	12044 Blue Spruce Dr.	750*	696 - 687	11/9/93	4; 15:9; 19:1,2; 21:5
G107	12022 Blue Spruce Dr.	750*	699-687	11/9/93	4; 15:10; 19:1,2; 21:6
G108	12004 Blue Spruce Dr.	750*	690	11/10/93	4; 15:23; 19:1,2; 22:2
G109	11990 Blue Spruce Dr.	750*	698-690	11/9/93	4; 15:11; 19:1,2; 21:7
G110	11974 Blue Spruce Dr.	750*	690	11/9/93	4; 15:12; 19:1,2; 22:3
G112	11952 Blue Spruce Dr.	750*	693-687	11/9/93	4; 15:13; 19:1,2; 21:8

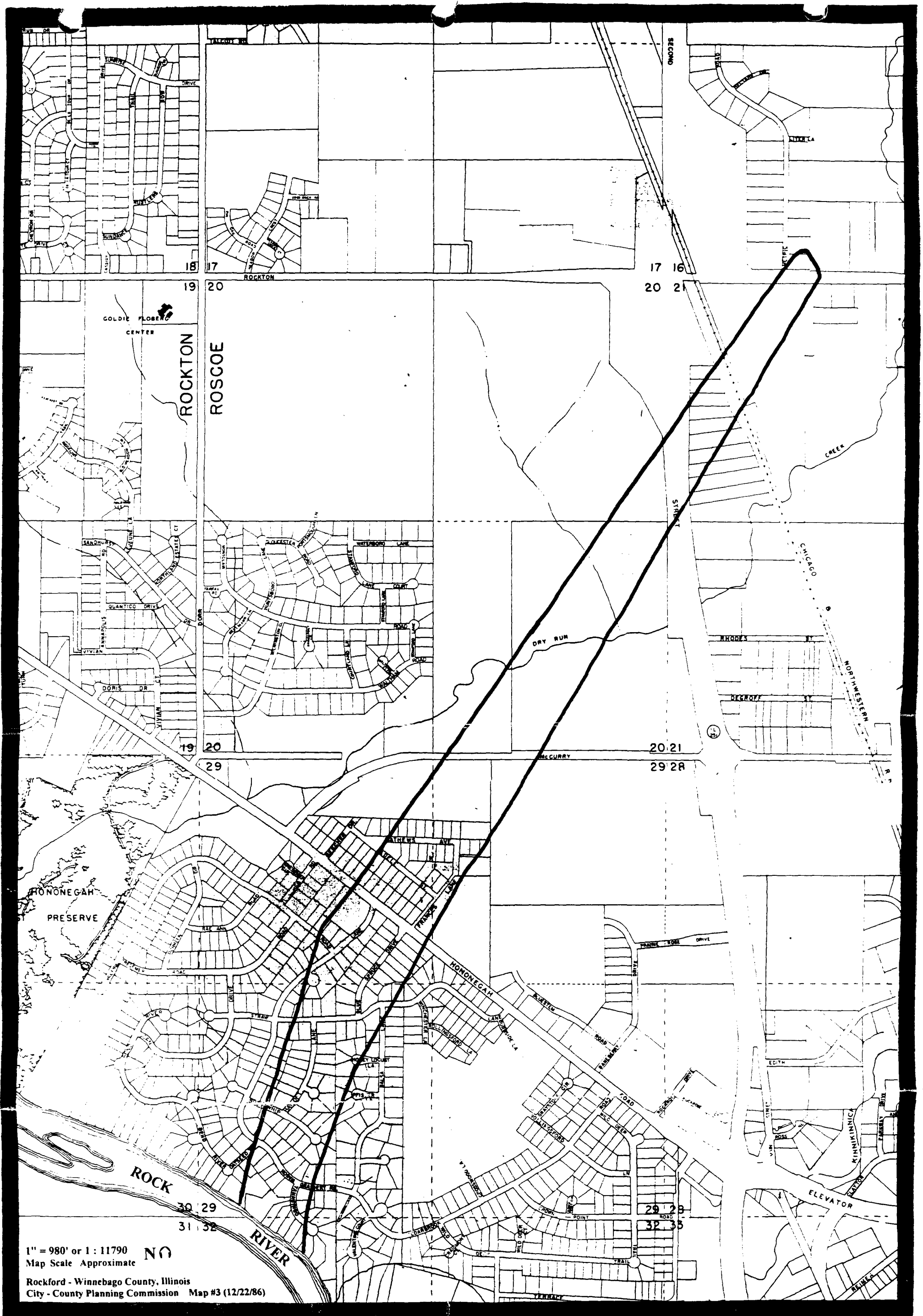


FIGURE 2 ESTIMATED EXTENT OF GROUNDWATER PLUME
 As Defined By Sample Points Used In This Scoring Package

Illinois Environmental Protection Agency

Site: Evergreen Manor Groundwater Contamination

ILD 984836734

Sample	Location	Surface Elevation feet above Mean Sea Level (MSL)	Elevation of Withdrawal ** feet above Mean Sea Level (MSL)	Date Sampled	Reference
G113	11975 Blue Spruce Dr.	750*	693-687	11/9/93	4; 15:14; 19:1,2; 21:9
G114	12017 Blue Spruce Dr.	750*	693-687	11/9/93	4; 15:15; 19:1,2; 21:10
G115	12031 Blue Spruce Dr.	750*	694-687	11/9/93	4; 15:16; 19:1,2; 21:11
G116	12053 Blue Spruce Dr.	750*	693-687	11/9/93	4; 15:17; 19:1,2; 21:12
G117	12075 Blue Spruce Dr.	750*	693-687	11/9/93	4; 15:18; 19:1,2; 21:13
G118	12091 Blue Spruce Dr.	750*	694-687	11/9/93	4; 15:19; 19:1,2; 21:14
G119	11775 Hayloft Ln.	750*	750-688	11/9/93	4; 15:20; 19:1,2; 21:15
G120	11793 Hayloft Ln.	750*	750-688	11/9/93	4; 15:21-22; 19:1,2; 21:16
G121	4325 Straw Ln.	750*	689	11/10/93	4; 15:25; 19:1,2; 21:17

Sample	Location	Surface Elevation (MSL)	Elevation of Withdrawal (MSL)**	Date Sampled	Reference
G122	11803 Hayloft Ln.	750*	750-688	11/10/93	4; 15:26; 19:1,2; 21:18
G123	4237 Buggywhip Ln.	740*	740-678	11/10/93	4; 15:27; 19:1,2; 21:19
G124	4272 Buggywhip Ln.	740*	740-678	11/10/93	4; 15:28; 19:1,2; 21:20
G125	4290 Buggywhip Ln.	745*	745-683	11/10/93	4; 15:29; 19:1,2; 21:21
G129	4539 Mathew Ave.	750*	unknown	11/15/93	4; 15:34;
G130	4567 Mathew Ave.	750*	unknown	11/15/93	4; 15:35;
G131	4566 Mathew Ave.	750*	unknown	11/15/93	4; 15:36;
G132	12264 Frances Ln.	750*	unknown	11/15/93	4; 15:37
G134	4478 Adele St.	750*	unknown	11/15/93	4; 15:38
G135	4481 Adele St.	750*	unknown	11/15/93	4; 15:39
G136	4420 Hononegah Rd.	750*	unknown	11/15/93	4; 15:40
G137	4434 Hononegah Rd.	750*	unknown	11/15/93	4; 15:41
G138	4444 Hononegah Rd.	750*	unknown	11/15/93	4; 15:42
G139	11542 Tanawingo Tr.	725*	667 - 663	11/15/93	4; 15:45; 19:1,2; 21:22

Sample	Location	Surface Elevation (MSL)	Elevation of Withdrawal (MSL) **	Date Sampled	Reference
G141	11501 Wagon Ln.	730*	730-668	11/16/93	4; 15:49; 19:1,2; 21:23
G142	11549 Wagon Ln.	735*	unknown	11/16/93	4; 15:50
G143	11511 Wagon Ln.	730*	730-668	11/16/93	4; 15:51; 19:1,2; 21:24
G144	11568 Wagon Ln.	730*	730-668	11/16/93	4; 15:52; 19:1,2; 21:25
G146	4257 Buggywhip Ln.	735*	735-673	11/16/93	4; 15:53; 19:1,2; 21:26
G147	4295 Buggywhip Ln.	735*	735-673	11/16/93	4; 15:54; 19:1,2; 21:27
G148	4341 Straw Ln.	750*	693-687	11/16/93	4; 15:55; 19:1,2; 21:28
G149	4303 Straw Ln.	750*	695-687	11/16/93	4; 15:56; 19:1,2; 21:29
G152	4474 Mathew Ave.	750*	unknown	12/16/93	4; 16:6
G153	4536 Mathew Ave.	750*	unknown	12/16/93	4; 16:7
G154	4509 Mathew Ave.	750*	unknown	12/16/93	4; 16:7
G155	4489 Mathew Ave.	750*	unknown	12/16/93	4; 16:8
G156	4463 Mathew Ave.	750*	unknown	12/16/93	4; 16:8

Sample	Location	Surface Elevation (MSL)	Elevation of Withdrawal (MSL)**	Date Sampled	Reference
G157	4428 Adele St.	750*	unknown	12/16/93	4; 16:9
G167	4427 Adele St.	750*	unknown	12/16/93	4; 16:13
G168	4445 Adele St.	750*	650-645	12/16/93	4; 16:14; 19:1,2; 21:30
G170	4415 Adele St.	750*	unknown	12/16/93	4; 16:15
G184	4504 Mathew Ave.	750*	unknown	12/20/93	4; 16:22
G188	4246 Straw Ln.	750*	unknown	12/28/93	4; 26:1,6
G190	12118 Blue Spruce Dr.	750*	unknown	01/03/94	4; 16:24
G192	4396 Straw Ln.	745*	688-682	01/03/94	4; 16:25; 19:1,3; 21:31
G196	12128 Wagon Ln.	755*	755-693	01/03/94	4; 16:27; 19:1,3; 21:32
G202	12103 Wagon Ln.	750*	750-688	01/03/94	4; 16:30; 19:1,3; 21:33
G203	12119 Wagon Ln.	755*	755-693	01/03/94	4; 16:30; 19:1,3; 21:34
G206	12145 Wagon Ln.	760*	760-697	01/04/94	4; 16:32; 19:1,3; 21:35
G212	4282 Valerie Rd.	750*	unknown	01/04/94	4; 16:35

Sample	Location	Surface Elevation (MSL)	Elevation of Withdrawal (MSL)**	Date Sampled	Reference
G219	4367 Straw Ln.	750*	700-687	01/04/94	4; 16:38; 19:1,3; 21:37
G229	11865 Hayloft Ln.	750*	750-688	01/10/94	4; 16:42; 19:1,3; 21:38
G241	12091 Wagon Ln.	750*	unknown	01/10/94	4; 16:48;
G247	4254 Buggywhip Ln.	740*	unknown	01/11/94	4; 16:51
G248	4232 Buggywhip Ln.	740*	740-678	01/11/94	4; 16:51; 19:1,3; 21:39
G251	12199 Wagon Ln.	755*	unknown	01/11/94	4; 16:53
G257	12088 Wagon Ln.	750*	750-688	01/11/94	4; 16:56; 19:1,3; 21:40
G260	4201 Buggywhip Ln.	740*	740-678	01/11/94	4; 16:57; 19:1,3; 21:41
G268	11828 Hayloft Ln.	750*	750-687	01/31/94	4; 16:61; 19:1,3; 21:42
G270	4279 Buggywhip Ln.	735*	unknown	01/31/94	4; 16:62
G276	11733 Hayloft Ln.	745*	unknown	01/31/94	4; 16:65
G283	11772 Hayloft Ln.	740*	unknown	02/01/94	4; 16:68

Sample	Location	Surface Elevation (MSL)	Elevation of Withdrawal (MSL)**	Date Sampled	Reference
G290	11821 Hayloft Ln.	750*	unknown	02/01/94	4; 16:72
G293	11909 Hayloft Ln.	750*	unknown	02/01/94	4; 16:73
G296	11761 Hayloft Ln.	740*	740-678	02/01/94	4; 16:75; 19:1,3; 21:43
G304	11530 Wagon Ln.	725*	725-663	02/07/94	4; 16:79; 19:1,3; 21:44
G316	11512 Wagon Ln.	725*	669-665	02/08/94	4; 16:84; 19:1,3; 21:45
G317	11593 Wagon Ln.	735*	735-673	02/08/94	4; 16:85; 19:1,3; 21:46
G318	11558 Tanawingo Tr.	725*	675-643	02/08/94	4; 16:85; 19:1,3; 21:47
G320	11603 Wagon Ln.	735*	735-673	02/08/94	4; 16:86; 19:1,3; 21:48
G322	11528 Tanawingo Tr.	725*	unknown	02/08/94	4; 16:87
G338	4460 Adele St.	750*	unknown	03/24/94	4; 16:103
G357	11570 Tanawingo Tr.	725*	725-663	03/25/94	4; 16:115; 19:1,3; 21:49
G358	11546 Wagon Ln.	730*	730-668	03/25/94	4; 16:115; 19:1,3; 21:50

Sample	Location	Surface Elevation (MSL)	Elevation of Withdrawal (MSL) **	Date Sampled	Reference
G360	11525 Wagon Ln.	735*	735-673	03/25/94	4; 16:116; 19:1,3; 21:51
G362	4217 Buggywhip Ln.	740*	740-678	03/25/94	4; 16:117; 19:1,3; 21:52
G364	11804 Hayloft Ln.	745*	unknown	03/25/94	4; 16:117
G365	11847 Hayloft Ln.	750*	750-688	03/25/94	4; 16:118; 19:1,3; 21:53
G101D	Kelley Sand & Gravel	727.6	657.6- 647.6	02/23/95	16:148; 23:37,70
G103S	EcoLab	764.3	732.3- 722.3	02/21/95	16:142; 23:40,70
G104S	North of Mathew Ave.	753.3	703.3- 693.3	02/22/95	16:147; 23:42,70
G105D	North of Mathew Ave.	755.3	665.3- 655.3	03-23-94	16:146; 23:45,70
G105D	North of Mathew Ave.	755.3	665.3- 655.3	02/22/95	16:145; 23:45,70
G106S	Northeast of Mathew Ave.	754.8	699.8- 689.8	02/22/95	16:145; 23:46,70
G107D	West of Hwy. 251	763.3	708.3- 698.3	03/25/94	16:109; 23:49,70
G107D	West of Hwy. 251	763.3	708.3- 698.3	02/21/95	16:143; 23:49,70
G108D	West of Hwy. 251	764.4	709.4- 699.4	02/21/95	16:144; 23:51,70
G109D	West of Hwy. 251	766.9	706.9- 696.9	02/25/94	16:112; 23:53,70
G109D	West of Hwy. 251	766.9	706.9- 696.9	02/23/95	16:149; 23:53,70
G110S	West of Hwy. 251	745.4	724.4- 714.4	02/23/95	16:150; 23:54,70

Sample	Location	Surface Elevation (MSL)	Elevation of Withdrawal (MSL) **	Date Sampled	Reference
G113X	From monitoring well G113, north-west corner of Rockton and Metric Rds.	772.19	731.05-720.51	02/21/95	16:140; 24:3,10, 11,14
G114X	From monitoring well G114, at Rockton Rd. SW of Regal Beloit bldg.	772.49	726.36-715.56	02/21/95	16:140; 24:4,12, 13,14

* Estimated from topographic map (4)

** Elevation range calculated by subtracting depth of water withdrawal or screen interval (found on well logs) from estimated ground surface elevation.

Well logs for several of the residential wells are not available. However, information from various sources (cited below) indicates that these wells most likely are finished in the sand and gravel at an approximate depth of 60 ft. to 65 ft. below ground surface.

Logs for residential wells that are in the same subdivisions, (but not utilized for scoring purposes) show that most wells draw from the sand and gravel aquifer at depths of 60 to 65 ft. below ground surface (21:54-80). Also, the Illinois State Water Survey Private Well Database shows that the vast majority of wells in the area (T. 46N, R.2E, Section 29) are at depths of 60 - 70 ft. below ground surface (27:all).

In the following table, these definitions apply:

1,1-DCE: 1,1-Dichloroethylene
 1,1-DCA: 1,1-Dichloroethane
 1,1,1-TCA: 1,1,1-Trichloroethane
 TCE: Trichloroethylene
 cis-1,2-DCE: cis-1,2-Dichloroethylene
 1,2-DCE (total): 1,2-Dichloroethylene (total)
 PCE: Perchloroethylene (= Tetrachloroethylene)
 CRQL: Contract Required Quantitation Limit

The Sample Quantitation Limit is not available for the samples in the following table, which were analyzed under the EPA Contract Laboratory Program. Therefore, the Contract Required Quantitation Limit (CRQL) is used, as directed in the Hazard Ranking System; Final Rule, Table 2-3, page 51589.

Sample ID	Hazardous Substances	Conc. ug/l	CRQL ug/l	References
G103	1,1,1-TCA TCE	19 31	10 10	13:2-15,62-63; 28:all
G104	1,1,1-TCA TCE	15 23	10 10	13:2-15,64-65; 28:all
G105	1,1,1-TCA TCE	13 20	10 10	13:2-15,66-67; 28:all

Sample ID	Hazardous Substances	Conc. ug/l	CRQL ug/l	References
G106	1,1,1-TCA TCE	14 23	10 10	13:2-15,68-69; 28:all
G107	1,1,1-TCA TCE	24 35	10 10	13:2-15,70-71; 28:all
G108	1,1,1-TCA TCE	15 20	10 10	13:2-15,72-73; 28:all
G109	1,1,1-TCA TCE	10 17	10 10	13:2-15,74-75; 28:all
G110	1,1,1-TCA TCE	10 18	10 10	13:2-15,76-77; 28:all
G112	1,1,1-TCA TCE	12 23	10 10	13:2-15,80-81; 28:all
G113	1,1,1-TCA TCE	23 38	10 10	13:16-29,82-83; 28:all
G114	1,1,1-TCA TCE	20 36	10 10	13:16-29,84-85; 28:all
G115	1,1,1-TCA TCE	15 27	10 10	13:16-29,86-87; 28:all
G116	1,1,1-TCA TCE	18 27	10 10	13:16-29,88-89; 28:all
G117	1,1,1-TCA TCE	12 24	10 10	13:16-29,90-91; 28:all
G118	TCE	19	10	13:16-29,92-93; 28:all

Sample ID	Hazardous Substances	Conc. ug/l	CRQL ug/l	References
G119	1,1,1-TCA TCE	19 29	10 10	13:16-29, 94-95; 28:all
G120	1,1,1-TCA TCE	14 24	10 10	13:16-29, 96-97; 28:all
G121	1,1,1-TCA TCE	10 18	10 10	13:16-29, 98-99; 28:all
G122	1,1,1-TCA TCE	17 25	10 10	13:16-29, 100-101; 28:all
G123	1,1,1-TCA TCE	22 23	10 10	13:16-29, 102-103; 28:all
G124	1,1,1-TCA TCE	17 30	10 10	13:16-29, 104-105; 28:all
G125	TCE	19	10	13:16-29, 106-107; 28:all
G129	1,1,1-TCA TCE	14 25	10 10	13:30-43, 114-115; 28:all
G130	TCE	17	10	13:30-43, 116-117; 28:all
G131	1,1,1-TCA TCE	22 20	10 10	13:30-43, 118-119; 28:all
G132	1,1,1-TCA TCE	12 18	10 10	13:30-43, 120-121; 28:all
G134	1,1,1-TCA TCE	16 25	10 10	13:30-43, 124-125; 28:all

Sample ID	Hazardous Substances	Conc. ug/l	CRQL ug/l	References
G135	1,1,1-TCA TCE	21 29	10 10	13:30-43, 126-127; 28:all
G136	1,1,1-TCA TCE	29 24	10 10	13:30-43, 128-129; 28:all
G137	1,1,1-TCA TCE	20 27	10 10	13:30-43, 130-131; 28:all
G138	1,1,1-TCA TCE	12 23	10 10	13:30-43, 132-133; 28:all
G139	TCE	11	10	13:30-43, 134-135; 28:all
G141	1,1,1-TCA TCE	10 18	10 10	13:44-57, 138-139; 28:all
G142	1,1,1-TCA TCE	33 40	10 10	13:44-57, 140-141; 28:all
G143	1,1,1-TCA TCE	37 34	10 10	13:44-57, 142-143; 28:all
G144	1,1,1-TCA TCE	34 35	10 10	13:44-57, 144-145; 28:all
G146	1,1,1-TCA TCE	21 28	10 10	13:44-57, 148-149; 28:all
G147	1,1,1-TCA TCE	11 22	10 10	13:44-57, 150-151; 28:all
G148	1,1,1-TCA TCE	22 31	10 10	13:44-57, 152-153; 28:all

Sample ID	Hazardous Substances	Conc. ug/l	CRQL ug/l	References
G149	1,1,1-TCA TCE	13 22	10 10	13:44-57, 154-155; 28:all
G152	1,2-DCE (TOTAL) 1,1,1-TCA TCE PCE	2 18 6 2	2 2 2 2	14:31-32; 28:all
G153	1,2-DCE (TOTAL) 1,1,1-TCA TCE PCE	5 21 15 4	2 2 2 2	14:33-34; 28:all
G154	Chloromethane 1,1-DCA 1,2-DCE (TOTAL) 1,1,1-TCA TCE PCE	5 2 8 18 22 5	2 2 2 2 2 2	14:35-36; 28:all
G155	Chloromethane 1,2-DCE (TOTAL) 1,1,1-TCA TCE PCE	2 3 21 10 2	2 2 2 2 2	14:37-38; 28:all
G156	1,2-DCE (TOTAL) 1,1,1-TCA TCE PCE	2 21 6 2	2 2 2 2	14:39-40; 28:all
G157	1,2-DCE (TOTAL) 1,1,1-TCA TCE PCE	2 17 6 2	2 2 2 2	14:41-42; 28:all
G167	1,2-DCE (TOTAL) 1,1,1-TCA TCE PCE	3 22 12 2	2 2 2 2	14:43-44; 28:all
G168	Chloromethane 1,2-DCE (TOTAL) 1,1,1-TCA TCE	4 3 16 13	2 2 2 2	14:45-46; 28:all

Sample ID	Hazardous Substances	Conc. ug/l	CRQL ug/l	References
G170	Chloromethane	2	2	14:66-67; 28:all
	1,1-DCE	2	2	
	1,2-DCE (TOTAL)	2	2	
	1,1,1-TCA	30	2	
	TCE	6	2	
G184	1,2-DCE (TOTAL)	2	2	14:86-87; 28:all
	1,1,1-TCA	17	2	
	TCE	10	2	
	PCE	4	2	

The Sample Quantitation Limit is not available for the samples in the following table, which were analyzed using 524.2 drinking water methods rather than under the EPA Contract Laboratory Program. Therefore, the Method Detection Limit (MDL) is used, as directed in the Hazard Ranking System; Final Rule, Table 2-3, page 51589.

Sample ID	Hazardous Substances	Conc. ug/l	MDL ug/l	References
G188	1,1-DCE 1,1,1-TCA TCE	0.74 11 2.1	0.069 0.105 0.065	14:106-108; 9:all; 32:3
G190	1,1-DCE 1,1-DCA 1,1,1-TCA TCE cis-1,2-DCE	1.1 1.3 14 27 D 5.3	0.197 0.210 0.288 0.221 0.511	14:129-134; 9:all; 32:6
G192	1,1,1-TCA TCE	1.6 6.0	0.288 0.221	14:135-137; 9:all; 32:6
G196	1,1-DCE 1,1,1-TCA TCE	1.8 28 D 5.7	0.197 0.288 0.221	14:138-143; 9:all; 32:6
G202	1,1-DCE 1,1-DCA 1,1,1-TCA TCE cis-1,2-DCE	1.3 1.1 19 7.3 1.0	0.197 0.210 0.288 0.221 0.511	14:144-146; 9:all; 32:6
G203	1,1-DCE 1,1-DCA 1,1,1-TCA TCE cis-1,2-DCE	1.7 1.2 20 8.2 1.2	0.197 0.210 0.288 0.221 0.511	14:147-149; 9:all; 32:6
G206	1,1-DCE 1,1-DCA 1,1,1-TCA TCE	2.4 1.6 34 D 15	0.197 0.210 0.288 0.221	14:169-174; 9:all; 32:6
G212	1,1,1-TCA	21 D	0.288	14:175-180; 9:all; 32:6
G219	1,1,1-TCA TCE cis-1,2-DCE	5.1 11 1.4	0.288 0.221 0.511	14:184-186; 9:all; 32:6

Sample ID	Hazardous Substances	Conc. ug/l	MDL ug/l	References
G229	1,1,1-TCA TCE cis-1,2-DCE	19.00 20.00 2.80	0.288 0.221 0.511	14:206-208; 9:all; 32:6
G241	1,1,1-TCA	26.00	0.288	14:233-238; 9:all; 32:6
G247	1,1-DCE 1,1-DCA 1,1,1-TCA TCE cis-1,2-DCE	2.00 2.40 20.00 D 31.00 D 4.30	0.197 0.210 0.288 0.221 0.511	14:239-244; 9:all; 32:6
G248	1,1-DCE 1,1-DCA 1,1,1-TCA TCE cis-1,2-DCE	2.60 3.00 25.00 D 38.00 D 4.70	0.197 0.210 0.288 0.221 0.511	14:245-250; 9:all; 32:6
G251	1,1-DCE 1,1-DCA cis-1,2-DCE	2.30 1.50 3.80	0.197 0.210 0.511	14:251-256; 9:all; 32:6
G257	1,1-DCE TCE	1.20 5.40	0.197 0.221	14:257-259; 9:all; 32:6
G260	1,1-DCE 1,1,1-TCA TCE cis-1,2-DCE	1.00 12.00 12.00 1.20	0.197 0.288 0.221 0.511	14:284-286; 9:all; 32:6
G268	1,1-DCE 1,1-DCA 1,1,1-TCA TCE cis-1,2-DCE	1.5 1.3 18 13 1.9	0.560 0.402 0.374 0.519 0.609	14:306-308; 9:all; 33:2
G270	Methylene Chloride 1,1-DCE 1,1-DCA 1,1,1-TCA TCE cis-1,2-DCE	0.5 1.4 1.4 14 29 4.0	0.455 0.560 0.402 0.374 0.519 0.609	14:309-311; 9:all; 33:2
G276	Methylene Chloride 1,1-DCE 1,1-DCA 1,1,1-TCA TCE cis-1,2-DCE	1.1 2.2 1.6 25 23 3.1	0.455 0.560 0.402 0.374 0.519 0.609	14:312-314; 9:all; 33:2

Sample ID	Hazardous Substances	Conc. ug/l	MDL ug/l	References
G283	Methylene Chloride 1,1-DCE 1,1-DCA 1,1,1-TCA TCE cis-1,2-DCE	1.2 1.4 1.2 16 11 1.6	0.455 0.560 0.402 0.374 0.519 0.609	14:331-333; 9:all; 33:2
G290	1,1-DCE 1,1-DCA 1,1,1-TCA TCE cis-1,2-DCE	1.6 1.2 17 22 3.1	0.560 0.402 0.374 0.519 0.609	14:334-336; 9:all; 33:2
G293	Methylene Chloride 1,1-DCE 1,1-DCA 1,1,1-TCA TCE cis-1,2-DCE	0.8 1.0 0.8 14 12 1.4	0.455 0.560 0.402 0.374 0.519 0.609	14:337-339; 9:all; 33:2
G296	Methylene Chloride 1,1-DCE 1,1-DCA 1,1,1-TCA TCE cis-1,2-DCE	0.5 1.3 1.2 18 19 2.5	0.455 0.560 0.402 0.374 0.519 0.609	14:340-342; 9:all; 33:2
G304	1,1-DCE 1,1-DCA 1,1,1-TCA TCE	2 2.2 19 25	0.560 0.402 0.374 0.519	14:362-364; 9:all; 33:2
G316	1,1-DCE 1,1-DCA 1,1,1-TCA TCE cis-1,2-DCE	1.4 1.7 16 31 4.4	0.560 0.402 0.374 0.519 0.609	14:384-386; 9:all; 33:2
G317	1,1-DCE 1,1-DCA 1,1,1-TCA TCE cis-1,2-DCE	2.8 2.1 29 24 2.8	0.560 0.402 0.374 0.519 0.609	14:387-389; 9:all; 33:2
G318	1,1-DCE 1,1-DCA 1,1,1-TCA TCE cis-1,2-DCE	0.6 1.2 9.7 17 2.2	0.560 0.402 0.374 0.519 0.609	14:390-392; 9:all; 33:2

Sample ID	Hazardous Substances	Conc. ug/l	MDL ug/l	References
G320	1,1-DCE 1,1-DCA 1,1,1-TCA TCE cis-1,2-DCE	0.9 0.9 11 5.3 0.6	0.560 0.402 0.374 0.519 0.609	14:393-395; 9:all; 33:2
G322	1,1-DCA 1,1,1-TCA TCE cis-1,2-DCE	0.5 3.6 11 2.3	0.402 0.374 0.519 0.609	14:396-398; 9:all; 33:2
G338	1,1-DCE 1,1-DCA 1,1,1-TCA TCE cis-1,2-DCE PCE	0.9 1.3 16 23 6.4 4.0	0.560 0.402 0.374 0.519 0.609 0.497	14:424-426; 9:all; 33:2
G357	Methylene Chloride 1,1-DCE 1,1-DCA 1,1,1-TCA TCE cis-1,2-DCE	1.0 1.4 1.6 14 12 1.6	0.455 0.560 0.402 0.374 0.519 0.609	14:446-448; 9:all; 33:2
G358	1,1-DCE 1,1-DCA 1,1,1-TCA TCE cis-1,2-DCE	2.1 1.8 21 28 3.4	0.560 0.402 0.374 0.519 0.609	14:468-470; 9:all; 33:2
G360	1,1-DCE 1,1-DCA 1,1,1-TCA TCE cis-1,2-DCE	1.2 1.8 16 28 4.1	0.560 0.402 0.374 0.519 0.609	14:471-473; 9:all; 33:2
G362	1,1-DCE 1,1-DCA 1,1,1-TCA TCE cis-1,2-DCE	2.1 1.8 26 27 4.0	0.560 0.402 0.374 0.519 0.609	14:474-476; 9:all; 33:2
G364	1,1-DCE 1,1-DCA 1,1,1-TCA TCE cis-1,2-DCE	1.3 1.2 16 11 1.8	0.560 0.402 0.374 0.519 0.609	14:477-479; 9:all; 33:2

Sample ID	Hazardous Substances	Conc. ug/l	MDL ug/l	References
G365	1,1-DCE 1,1-DCA 1,1,1-TCA TCE cis-1,2-DCE	1.2 1.1 16 17 2.7	0.560 0.402 0.374 0.519 0.609	14:480-482; 9:all; 33:2
G101D (1995)	TCE	3	0.125	14:516-518; 9:all; 32:8
G103S (1995)	1,1,1-TCA PCE	3 40 D	0.090 0.090	14:522-527; 9:all; 32:8
G104S (1995)	1,1-DCE 1,1,1-TCA TCE	2 12 0.9	0.136 0.090 0.125	14:528-530; 9:all; 32:8
G105D (1994)	1,1-DCA 1,1,1-TCA TCE cis-1,2-DCE PCE	1.1 8.9 15 5.7 3.2	0.210 0.200 , 288 0.221 0.511 0.202	14:421-423; 9:all; 32:6
G105D (1995)	1,1-DCE 1,1-DCA 1,1,1-TCA TCE cis-1,2-DCE PCE	1 1 9 15 5 4	0.136 0.097 0.090 0.125 0.067 0.090	14:531-533; 9:all; 32:8
G106S (1995)	1,1,1-TCA TCE	1.0 3	0.090 0.125	14:534-536; 9:all; 32:8
G107D (1995)	1,1-DCE 1,1,1-TCA PCE	0.7 8 11	0.136 0.090 0.090	14:537-539; 9:all; 32:8
G108D (1995)	1,1-DCE 1,1,1-TCA PCE	0.5 7 3	0.136 0.090 0.090	14:540-542; 9:all; 32:8
G109D (1995)	1,1-DCE 1,1,1-TCA TCE cis-1,2-DCE PCE	0.8 8 3 6 7	0.136 0.090 0.125 0.067 0.090	14:543-545; 9:all; 32:8
G110S	1,1-DCE 1,1,1-TCA TCE	0.5 4 2	0.136 0.090 0.125	14:546-548; 9:all; 32:8

Sample ID	Hazardous Substances	Conc. ug/l	MDL ug/l	References
G113X	PCE	2	0.090	14:555-557; 9:all; 32:8
G114X	1,1,1-TCA	3	0.090	14:558-560; 9:all; 32:8

D (concentration column) - Identifies all compounds identified in an analysis at a secondary dilution factor. If a sample or extract is reanalyzed at a higher dilution factor as in the "E" flag, the "DL" suffix is appended to the sample number of the Form I for the diluted sample, and all concentration values are flagged with the "D" flag.

D (Sample ID) - collected from deeper monitoring well

S (Sample ID) - collected from shallower monitoring well

X (Sample ID) - monitoring well sample (as opposed to residential well sample)

NOTE: No estimated concentration data (qualified with a "J") has been included for use in this scoring package.

- Level I Samples

Sample ID	Hazardous Substance	Hazardous Substance Concentration (ug/l)	Benchmark, Benchmark Concentration (ug/l)	Reference
G103	TCE	31	MCL, 5	2:44; 13:62-63
G104	TCE	23	MCL, 5	2:44; 13:64-65
G105	TCE	20	MCL, 5	2:44; 13:66-67
G106	TCE	23	MCL, 5	2:44; 13:68-69
G107	TCE	35	MCL, 5	2:44; 13:70-71
G108	TCE	20	MCL, 5	2:44; 13:72-73
G109	TCE	17	MCL, 5	2:44; 13:74-75
G110	TCE	18	MCL, 5	2:44; 13:76-77
G112	TCE	23	MCL, 5	2:44; 13:80-81
G113	TCE	38	MCL, 5	2:44; 13:82-83
G114	TCE	36	MCL, 5	2:44; 13:84-85
G115	TCE	27	MCL, 5	2:44; 13:86-87
G116	TCE	27	MCL, 5	2:44; 13:88-89
G117	TCE	24	MCL, 5	2:44; 13:90-91
G118	TCE	19	MCL, 5	2:44; 13:92-93
G119	TCE	29	MCL, 5	2:44; 13:94-95
G120	TCE	24	MCL, 5	2:44; 13:96-97
G121	TCE	18	MCL, 5	2:44; 13:98-99
G122	TCE	25	MCL, 5	2:44; 13:100-101
G123	TCE	23	MCL, 5	2:44; 13:102-103
G124	TCE	30	MCL, 5	2:44; 13:104-105
G125	TCE	19	MCL, 5	2:44; 13:106-107
G129	TCE	25	MCL, 5	2:44; 13:114-115

Sample ID	Hazardous Substance	Hazardous Substance Concentration (ug/l)	Benchmark, Benchmark Concentration (ug/l)	Reference
G130	TCE	17	MCL, 5	2:44; 13:116-117
G131	TCE	20	MCL, 5	2:44; 13:118-119
G132	TCE	18	MCL, 5	2:44; 13:120-121
G134	TCE	25	MCL, 5	2:44; 13:124-125
G135	TCE	29	MCL, 5	2:44; 13:126-127
G136	TCE	24	MCL, 5	2:44; 13:128-129
G137	TCE	27	MCL, 5	2:44; 13:130-131
G138	TCE	23	MCL, 5	2:44; 13:132-133
G139	TCE	11	MCL, 5	2:43; 13:134-135
G141	TCE	18	MCL, 5	2:43; 13:138-139
G142	TCE	40	MCL, 5	2:43; 13:140-141
G143	TCE	34	MCL, 5	2:44; 13:142-143
G144	TCE	35	MCL, 5	2:44; 13:144-145
G146	TCE	28	MCL, 5	2:44; 13:148-149
G147	TCE	22	MCL, 5	2:44; 13:150-151
G148	TCE	31	MCL, 5	2:44; 13:152-153
G149	TCE	22	MCL, 5	2:44; 13:154-155
G152	TCE PCE	6 2	MCL, 5 CA, 1.6	2:43, 44; 14:31-32
G153	TCE PCE	15 4	MCL, 5 CA, 1.6	2:43, 44; 14:33-34
G154	TCE PCE	22 5	MCL, 5 CA, 1.6	2:43, 44; 14:35-36
G155	TCE PCE	10 2	MCL, 5 CA, 1.6	2:43, 44; 14:37-38
G156	TCE PCE	6 2	MCL, 5 CA, 1.6	2:43, 44; 14:39-40
G157	TCE PCE	6 2	MCL, 5 CA, 1.6	2:43, 44; 14:41-42

Sample ID	Hazardous Substance	Hazardous Substance Concentration (ug/l)	Benchmark, Benchmark Concentration (ug/l)	Reference
G167	TCE PCE	12 2	MCL, 5 CA, 1.6	2:43,44; 14:43-44
G168	TCE	13	MCL, 5	2:44; 14:45-46
G170	1,1-DCE TCE	2 6	CA, 0.14 MCL, 5	2:32,44; 14:66-67
G184	TCE	10	MCL, 5	2:44; 14:86-87
G188	1,1-DCE	0.74	CA, 0.14	2:32; 14:106-108
G190	1,1-DCE TCE	1.1 27D	CA, 0.14 MCL, 5	2:32,44; 14:129-134
G192	TCE	6.0	MCL, 5	2:44; 14:135-137
G196	1,1-DCE TCE	1.8 5.7	CA, 0.14 MCL, 5	2:32,44; 14:138-143
G202	1,1-DCE TCE	1.3 7.3	CA, 0.14 MCL, 5	2:32,44; 14:144-146
G203	1,1-DCE TCE	1.7 8.2	CA, 0.14 MCL, 5	2:32,44; 14:147-149
G206	1,1-DCE TCE	2.4 15	CA, 0.14 MCL, 5	2:32,44; 14:169-174
G219	TCE	11	MCL, 5	2:44; 14:184-186
G229	TCE	20.00	MCL, 5	2:44; 14:206-208
G247	1,1-DCE TCE	2.00 31.00D	CA, 0.14 MCL, 5	2:32,44; 14:239-244
G248	1,1-DCE TCE	2.60 38.00D	CA, 0.14 MCL, 5	2:32,44; 14:245-250

Sample ID	Hazardous Substance	Hazardous Substance Concentration (ug/l)	Benchmark, Benchmark Concentration (ug/l)	Reference
G251	1,1-DCE	2.30	CA, 0.14	2:32; 14:251-256
G257	1,1-DCE TCE	1.20 5.40	CA, 0.14 MCL, 5	2:32,44; 14:257-259
G260	1,1-DCE TCE	1.00 12.00	CA, 0.14 MCL, 5	2:32,44; 14:284-286
G268	1,1-DCE TCE	1.5 13	CA, 0.14 MCL, 5	2:32,44; 14:306-308
G270	1,1-DCE TCE	1.4 29	CA, 0.14 MCL, 5	2:32,44; 14:309-311
G276	1,1-DCE TCE	2.2 23	CA, 0.14 MCL, 5	2:32,44; 14:312-314
G283	1,1-DCE TCE	1.4 11	CA, 0.14 MCL, 5	2:32,44; 14:331-333
G290	1,1-DCE TCE	1.6 22	CA, 0.14 MCL, 5	2:32,44; 14:334-336
G293	1,1-DCE TCE	1.0 12	CA, 0.14 MCL, 5	2:32,44; 14:337-339
G296	1,1-DCE TCE	1.3 19	CA, 0.14 MCL, 5	2:32,44; 14:340-342
G304	1,1-DCE TCE	2 25	CA, 0.14 MCL, 5	2:32,44; 14:362-364
G316	1,1-DCE TCE	1.4 31	CA, 0.14 MCL, 5	2:32,44; 14:384-386
G317	1,1-DCE TCE	2.8 24	CA, 0.14 MCL, 5	2:32,44; 14:387-389
G318	1,1-DCE TCE	0.6 17	CA, 0.14 MCL, 5	2:32,44; 14:390-392
G320	1,1-DCE TCE	0.9 5.3	CA, 0.14 MCL, 5	2:32,44; 14:393-395
G322	TCE	11	MCL, 5	2:44; 14:396-398

Sample ID	Hazardous Substance	Hazardous Substance Concentration (ug/l)	Benchmark, Benchmark Concentration (ug/l)	Reference
G338	1,1-DCE TCE PCE	0.9 23 4.0	CA, 0.14 MCL, 5 CA, 1.6	2:32,43,44; 14:424-426
G357	1,1-DCE TCE	1.4 12	CA, 0.14 MCL, 5	2:32,44; 14:446-448
G358	1,1-DCE TCE	2.1 28	CA, 0.14 MCL, 5	2:32,44; 14:468-470
G360	1,1-DCE TCE	1.2 28	CA, 0.14 MCL, 5	2:32,44; 14:471-473
G362	1,1-DCE TCE	2.1 27	CA, 0.14 MCL, 5	2:32,44; 14:474-476
G364	1,1-DCE TCE	1.3 11	CA, 0.14 MCL, 5	2:32,44; 14:477-479
G365	1,1-DCE TCE	1.2 17	CA, 0.14 MCL, 5	2:32,44; 14:480-482

D - all compounds identified in an analysis at a secondary dilution factor. If a sample or extract is reanalyzed at a higher dilution factor as in the "E" flag, the "DL" suffix is appended to the sample number of the Form I for the diluted sample, and all concentration values are flagged with the "D" flag.

CA - Cancer Risk

MCL - Maximum Contaminant Level

Attribution:

No specific source(s) that may have released hazardous substances to the ground water has been identified. Illinois EPA ground water investigations have traced the plume from residences on the north/east bank of the Rock River in a northeasterly direction to a small industrial/commercial area located east of the intersection of State Route 251 and Rockton Road (11:1-2). However, no specific source(s) have been identified at the industrial/commercial area (11:1-2). The Illinois EPA has identified four potentially responsible parties based on ground water investigation results and historic operations (29:2-5).

Hazardous Substances Released

tetrachloroethylene (perchloroethene, PCE)
trichloroethylene (TCE)
1,1-dichloroethane (1,1-DCA)
1,1-dichloroethylene (1,1-DCE)
1,1,1-trichloroethane (1,1,1-TCA)
cis-1,2-dichloroethylene (cis-1,2-DCE)
1,2-dichloroethylene (total) (1,2-DCE (total))
chloromethane
methylene chloride

=====

Ground Water Observed Release Factor Value: 550

3.1.2 POTENTIAL TO RELEASE

Potential to release has not been evaluated because an observed release has been established for the aquifer.

3.2 WASTE CHARACTERISTICS

3.2.1 Toxicity/Mobility

<u>Hazardous Substance</u>	<u>Source No.</u>	<u>Toxicity Factor Value</u>	<u>Mobility Factor Value</u>	<u>Toxicity/Mobility</u>	<u>Ref.</u>
TCE	1	10	1	10	1:51601,51602 2:22
1,1-DCE	1	100	1	100	1:51601,51602 2:10
PCE	1	100	1	100	1:51601,51602 2:21
Methylene Chloride	1	10	1	10	1:51601,51602 2:17
1,1-DCA	1	10	1	10	1:51601,51602 2:10
1,1,1-TCA	1	1	1	1	1:51601,51602 2:22
c-1,2-DCE	1	100	1	100	1:5101,51602 2:11
Chloro-methane	1	10	1	10	1:51601,51602 2:8
1,2-DCE (Total)	1	100	1	100	1:51601,51602 2:11

According to the Hazard Ranking System; Final Rule, any substance that meets the criteria for an observed release by chemical analysis to any aquifer underlying the source is assigned a mobility factor value of 1 (1:51601). An observed release to the sand and gravel drift aquifer has been established for all of the hazardous substances listed above, as documented in Section 3.1.1 of this document. Therefore, they all have an assigned mobility factor value of 1.

According to the Hazard Ranking System; Final Rule, Section 3.2.1.3, the toxicity/mobility factor values assigned to each hazardous substance are compared. The highest value is assigned as the Toxicity /Mobility Factor Value for the aquifer (1:51602).

=====

Toxicity/Mobility Factor Value: 100

3.2.2 Hazardous Waste Quantity

	Source Hazardous Waste Quantity	Is source hazardous constituent quantity data complete?(yes/no)
<u>Source Number</u>	<u>Value (Section 2.4.2.1.5)</u>	<u></u>
1	>0	No

Sum of Values: >0

Because no source hazardous constituent quantity data is available, the value is assigned pursuant to Section 2.4.2.2. of the Hazard Ranking System; Final Rule, "If any target for that migration pathway is subject to Level I or II concentrations, assign either the value from Table 2-6 or a value of 100, whichever is greater, as the hazardous waste quantity factor for that pathway" (1:51592). Since there are Level I and II targets, the assigned value for hazardous waste quantity is 100.

3.2.3 Waste Characteristics Factor Category Value

Toxicity/Mobility = 100
Hazardous Waste Quantity = 100

(Toxicity/Mobility) x (Hazardous Waste Quantity) = Waste Characteristics
Product

$$100 \times 100 = 10000$$

Toxicity/Mobility Factor Value X Hazardous
Waste Quantity Factor Value: 10000

From Table 2-7 of the Hazard Ranking System; Final Rule, a Waste Characteristic Product of 10000 is assigned a Waste Characteristics Factor Category Value of 10 (1:51602,51592).

=====

Hazardous Waste Quantity Factor Value: 100
Waste Characteristics Factor Category Value: 10

3.3 TARGETS

Because contaminants were detected in the residential wells at Level I concentrations, the distance from source is considered to be 0.

Well	Distance From Source	Aquifer	Level I Contam. (Y/N)	Level II Contam. (Y/N)	Potential Contam.	Reference
G103	0	1	Y	-	-	13:62-63; 19:1,2; 21:3
G104	0	1	Y	-	-	13:64-65; 19:1,2; 21:4
G105	0	1	Y	-	-	13:66-67; 19:1,2; 22:1
G106	0	1	Y	-	-	13:68-69; 19:1,2; 21:5
G107	0	1	Y	-	-	13:70-71; 19:1,2; 21:6
G108	0	1	Y	-	-	13:72-73; 19:1,2; 22:2
G109	0	1	Y	-	-	13:74-75; 19:1,2; 21:7
G110	0	1	Y	-	-	13:76-77; 19:1,2; 22:3
G112	0	1	Y	-	-	13:80-81; 19:1,2; 21:8
G113	0	1	Y	-	-	13:82-83; 19:1,2; 21:9
G114	0	1	Y	-	-	13:84-85; 19:1,2; 21:10
G115	0	1	Y	-	-	13:86-87; 19:1,2; 21:11
G116	0	1	Y	-	-	13:88-89; 19:1,2; 21:12
G117	0	1	Y	-	-	13:90-91; 19:1,2; 21:13
G118	0	1	Y	-	-	13:92-93; 19:1,2; 21:14
G119	0	1	Y	-	-	13:94-95; 19:1,2; 21:15
G120	0	1	Y	-	-	13:96-97; 19:1,2; 21:16
G121	0	1	Y	-	-	13:98-99; 19:1,2; 21:17

Well	Distance From Source	Aquifer	Level I Contam. (Y/N)	Level II Contam. (Y/N)	Potential Contam.	Reference
G122	0	1	Y	-	-	13:100-101; 19:1,2; 21:18
G123	0	1	Y	-	-	13:102-103; 19:1,2; 21:19
G124	0	1	Y	-	-	13:104-105; 19:1,2; 21:20
G125	0	1	Y	-	-	13:106-107; 19:1,2; 21:21
G129	0	1*	Y	-	-	13:114-115;
G130	0	1*	Y	-	-	13:116-117
G131	0	1*	Y	-	-	13:118-119
G132	0	1*	Y	-	-	13:120-121
G134	0	1*	Y	-	-	13:124-125
G135	0	1*	Y	-	-	13:126-127
G136	0	1*	Y	-	-	13:128-129
G137	0	1*	Y	-	-	13:130-131
G138	0	1*	Y	-	-	13:132-133
G139	0	1	Y	-	-	13:134-135; 19:1,2; 21:22
G141	0	1	Y	-	-	13:138-139; 19:1,2; 21:23
G142	0	1*	Y	-	-	13:140-141
G143	0	1	Y	-	-	13:142-143; 19:1,2; 21:24
G144	0	1	Y	-	-	13:144-145; 19:1,2; 21:25
G146	0	1	Y	-	-	13:148-149; 19:1,2 21:26
G147	0	1	Y	-	-	13:150-151; 19:1,2; 21:27
G148	0	1	Y	-	-	13:152-153; 19:1,2; 21:28
G149	0	1	Y	-	-	13:154-155; 19:1,2; 21:29
G152	0	1*	Y	-	-	14:1-2
G153	0	1*	Y	-	-	14:3-4
G154	0	1*	Y	-	-	14:5-6

Well	Distance From Source	Aquifer	Level I Contam. (Y/N)	Level II Contam. (Y/N)	Potential Contam.	Reference
G155	0	1*	Y	-	-	14:7-8
G156	0	1*	Y	-	-	14:9-10
G157	0	1*	Y	-	-	14:11-12
G167	0	1*	Y	-	-	14:13-14
G168	0	1	Y	-	-	14:15-16; 19:1,2; 21:30
G170	0	1*	Y	-	-	14:17-18
G184	0	1*	Y	-	-	14:19-20
G188	0	1*	Y	-	-	14:21-23
G190	0	1*	Y	-	-	14:24-29
G192	0	1	Y	-	-	14:30-32; 19:1,3; 21:31
G196	0	1	Y	-	-	14:33-38; 19:1,3; 21:32
G202	0	1	Y	-	-	14:39-41; 19:1,3; 21:33
G203	0	1	Y	-	-	14:42-44; 19:1,3; 21:34
G206	0	1	Y	-	-	14:45-50; 19:1,3; 21:35
G219	0	1	Y	-	-	14:60-62; 19:1,3; 21:37
G229	0	1	Y	-	-	14:63-65; 19:1,3; 21:38
G247	0	1*	Y	-	-	14:72-77
G248	0	1	Y	-	-	14:78-83; 19:1,3; 21:39
G251	0	1*	Y	-	-	14:84-89
G257	0	1	Y	-	-	14:90-92; 19:1,3; 21:40
G260	0	1	Y	-	-	14:93-95; 19:1,3; 21:41
G268	0	1	Y	-	-	14:96-98; 19:1,3; 21:42
G270	0	1*	Y	-	-	14:99-101

Well	Distance From Source	Aquifer	Level I Contam. (Y/N)	Level II Contam. (Y/N)	Potential Contam.	Reference
G276	0	1*	Y	-	-	14:102-104
G283	0	1*	Y	-	-	14:105-107
G290	0	1*	Y	-	-	14:108-110
G293	0	1*	Y	-	-	14:111-113
G296	0	1	Y	-	-	14:114-116; 19:1,3; 21:43
G304	0	1	Y	-	-	14:117-119; 19:1,3; 21:44
G316	0	1	Y	-	-	14:120-122; 19:1,3; 21:45
G317	0	1	Y	-	-	14:123-125; 19:1,3; 21:46
G318	0	1	Y	-	-	14:126-128; 19:1,3; 21:47
G320	0	1	Y	-	-	14:129-131; 19:1,3; 21:48
G322	0	1*	Y	-	-	14:132-134
G338	0	1*	Y	-	-	14:135-137
G357	0	1	Y	-	-	14:138-140; 19:1,3; 21:49
G358	0	1	Y	-	-	14:141-143; 19:1,3; 21:50
G360	0	1	Y	-	-	14:144-146; 19:1,3; 21:51
G362	0	1	Y	-	-	14:147-149; 19:1,3; 21:52
G364	0	1*	Y	-	-	14:150-152
G365	0	1	Y	-	-	14:153-155; 19:1,3; 21:53

* Well logs for several of the residential wells are not available. However, the following information indicates that these wells most likely are finished in the sand and gravel at an approximate depth of 60 ft. to 65 ft. below ground surface. Well logs for residential wells that are in the same subdivisions, (but not utilized for scoring purposes) show that most wells draw from the sand and gravel aquifer at depths of 60 ft. to 65 ft. below ground surface (21:54-80). Also, the Illinois State Water Survey Private Well Database shows that the vast majority of wells in the area (T.46N, R.2E, Section 29) are at depths of 60 ft. - 70 ft. below ground surface (27:all).

3.3.1 Nearest Well

Well: Since the contaminant plume is the source, all contaminated wells are a distance of 0 ft. from the source.

Level of Contamination (I, II, or potential): I

If potential contamination, distance from source in miles: NA

According to the Hazard Ranking System; Final Rule, a Nearest Well Factor Value of 50 is assigned if one or more drinking water wells is subject to Level I concentrations (1: 51602-51603). Because drinking water wells are subject to Level I concentrations (as documented in Section 3.3.2.2 of this document), the Nearest Well Factor Value is assigned a 50.

=====

Nearest Well Factor Value: 50

3.3.2 Population

3.3.2.1 Level of Contamination

3.3.2.2 Level I Concentrations

Level I Well	Population	Reference
G103	2.57	30:3
G104	2.57	30:3
G105	2.57	30:3
G106	2.57	30:3
G107	2.57	30:3
G108	2.57	30:3
G109	2.57	30:3
G110	2.57	30:3
G112	2.57	30:3
G113	2.57	30:3
G114	2.57	30:3
G115	2.57	30:3
G116	2.57	30:3
G117	2.57	30:3
G118	2.57	30:3
G119	2.57	30:3
G120	2.57	30:3
G121	2.57	30:3
G122	2.57	30:3
G123	2.57	30:3
G124	2.57	30:3
G125	2.57	30:3
G129	2.57	30:3

Level I Well	Population	Reference
G130	2.57	30:3
G131	2.57	30:3
G132	2.57	30:3
G134	2.57	30:3
G135	2.57	30:3
G136	2.57	30:3
G137	2.57	30:3
G138	2.57	30:3
G139	2.57	30:3
G141	2.57	30:3
G142	2.57	30:3
G143	2.57	30:3
G144	2.57	30:3
G146	2.57	30:3
G147	2.57	30:3
G148	2.57	30:3
G149	2.57	30:3
G152	2.57	30:3
G153	2.57	30:3
G154	2.57	30:3
G155	2.57	30:3
G156	2.57	30:3
G157	2.57	30:3
G167	2.57	30:3
G168	2.57	30:3
G170	2.57	30:3
G184	2.57	30:3
G188	2.57	30:3
G190	2.57	30:3
G192	2.57	30:3

Level I Well	Population	Reference
G196	2.57	30:3
G202	2.57	30:3
G203	2.57	30:3
G206	2.57	30:3
G219	2.57	30:3
G229	2.57	30:3
G247	2.57	30:3
G248	2.57	30:3
G251	2.57	30:3
G257	2.57	30:3
G260	2.57	30:3
G268	2.57	30:3
G270	2.57	30:3
G276	2.57	30:3
G283	2.57	30:3
G290	2.57	30:3
G293	2.57	30:3
G296	2.57	30:3
G304	2.57	30:3
G316	2.57	30:3
G317	2.57	30:3
G318	2.57	30:3
G320	2.57	30:3
G322	2.57	30:3
G338	2.57	30:3
G357	2.57	30:3
G358	2.57	30:3

Level I Well	Population	Reference
G360	2.57	30:3
G362	2.57	30:3
G364	2.57	30:3
G365	2.57	30:3

The population exposed to Level I concentrations was calculated by multiplying the number of residential wells with Level I contamination by 2.57 persons per household, which is the number quoted for Winnebago County in the 1990 U.S. Census (30:3). All the residences sampled are located within Winnebago County (3; 15:5-56; 16:6-118; 26:1,6).

(84 Residences) X (2.57 persons per household) = 215.88 persons

According to the Hazard Ranking System; Final Rule, the Level I Factor Value is assigned by multiplying the number of people served by drinking water from points of withdrawal subject to Level I concentrations by 10 (1:51603).

(Number of persons) X 10 = Level I Factor Value

(215.88 persons) X (10) = 2158.8

Additional residential wells were found to contain Level I concentrations of contaminants. These wells were not included for scoring purposes since the data has not been validated.

=====
Population Served by
Level I Wells: 215.88

Level I Concentrations Factor Value: 2158.8

3.3.2.3 Level II Concentrations

Not Evaluated

=====

Level II Concentrations Factor Value: Not Evaluated

3.3.2.4 Potential Contamination

Additional wells located within 4 miles of the site may be subject to potential contamination. However, due to a lack of data concerning these targets, they have not been evaluated in the HRS scoring process.

Sum of Distance-Weighted Population Values: Not Evaluated

=====

Potential Contamination Factor Value: 0

3.3.3 RESOURCES

Not Evaluated due to lack of information concerning local resources.

=====

Resources Factor Value: NE

3.3.4 WELLHEAD PROTECTION AREA

Not Evaluated

=====

Wellhead Protection Area Factor Value: NE